PHOTOFACT* FOLDER SET

*TRADE MARK

NO. 57

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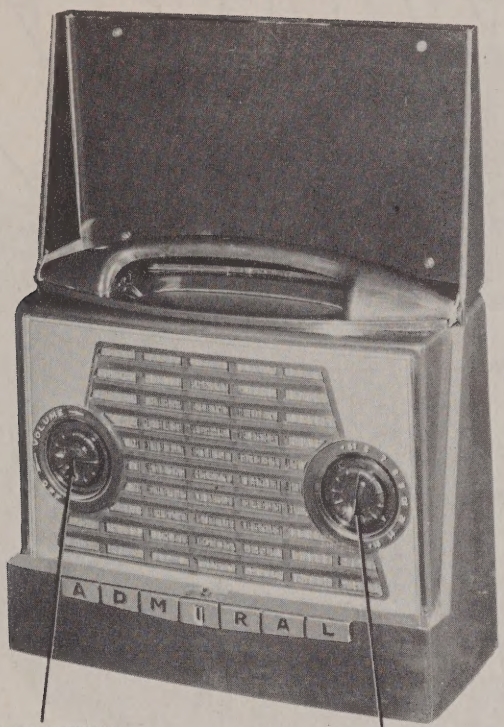
ADMIRAL CHASSIS 5F1
BATTERY-LINE OPERATED



ADMIRAL CHASSIS 5F1
BATTERY-LINE OPERATED

ADMIRAL MODEL 5F11

TRADE NAME	Admiral. Models 5F11, 5F12 (Ch.5F1)
MANUFACTURER	Admiral Corp., 3800 W. Cortland St. Chicago, Illinois.
TYPE SET	Three Power Operated Portable Superhetrodyne Receiver with Loop Antenna.
TUBES (FOUR)	Types 1R5 Converter, 1U4 IF Amp., 1U5 Det.-AVC-AF, 3V4 Power Output.
POWER SUPPLY RATING	110-120 Volts AC-DC or 7.5 Volts "A" Supply and 67.5 Volts "B" Supply. .17 Amp. @ 117 Volts AC or 58 MA @ 7.5 Volts DC and 9.2 MA @ 67.5 Volts DC.
TUNING RANGE—BROADCAST	535-1620 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use battery power when available. If AC power is used, use an isolation transformer when available. If not, connect a .1 MFD capactor in series with low side of the signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD	High side to pin 6 1R5. Low side to Chassis.	455KC	Tuning Cap. fully open.	Across voice coil	A1, A2 A3, A4	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001 MFD to reduce hum modulation.
2	"	"	1620KC	"	"	A5	Adjust for max. output.
	Install Chassis In Cabinet. Connect Loop Antenna.						
3		Loop	1400KC	Tune for Max output.	Across voice coil	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Install Pointer Knob with Indicator pointing to 1400KC

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PARTS LIST AND DESCRIPTIONS

ADMIRAL MODEL 5F11

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: ADMIRAL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	1R5	1R5	7AT	
2	IF Amp.	1U4	1U4	6AR	
3	Det-AVC-AF	1U5	1U5	6BW	
4	Power Output	3V4	3V4	6BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ADMIRAL PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
5A	30	150	67C 7-1	AF844D	UP42215	DY-3X20-150	EL-224	Filter ■
B	20	150						" ▲
C	20	150						"
6	100	25	67A 4-6	PRS 25/100	BRH251	M-100-25	UHC-102	Filament Bypass
7	.05	400	64B 1-22	484-05	GT4S5	ST-4-05	TC-15	Line Filter
8	.1	200	64B 1-30	484-1	GT2P1	ST-2-1	72P2	Line Isolation
9	01	400	64B 1-25	484-01	GT4S1	ST-4-01	TC-11	AVC Filter
10	.25	200	64B 1-28	484-25	GT2P25	ST-2-25	68P24	Conv. Fil. Bypass
11	1000	300	65B 6-41	1468-001	1W5D1	MW.5-21	1FM-21	Output Plate Bypass
12A	5000	300	*	1467-005	1D5D5	MW.5-25	1FM-25	Audio Coupling
B	100	300		1468-0001	5W5T1	MO.5-31	1FM-31	AF Plate Bypass
C	5000	300		1467-005	1D5D5	MW.5-25	1FM-25	AF Screen Bypass
13	1000	300	65B 6-41	1468-001	1W5D1	MW.5-21	1FM-21	Audio Coupling
14	100	300	65B 6-3	1468-0001	5W5T1	MO.5-31	1FM-31	RF Bypass
15	1000	300	65B 6-41	1468-001	1W5D1	MW.5-21	1FM-21	IF Grid. Filter
16	100	300	65B 6-3	1468-0001	5W5T1	MO.5-31	1FM-31	OSC Grid. Cap.

* Items 12A, 12B, 12C, 23A, 23B and 23C are combined into one unit obtainable under Mfgrs. part No. 63A4-3.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ADMIRAL PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
17	1 Meg.	½	75B1-21			Volume Control and Switch.

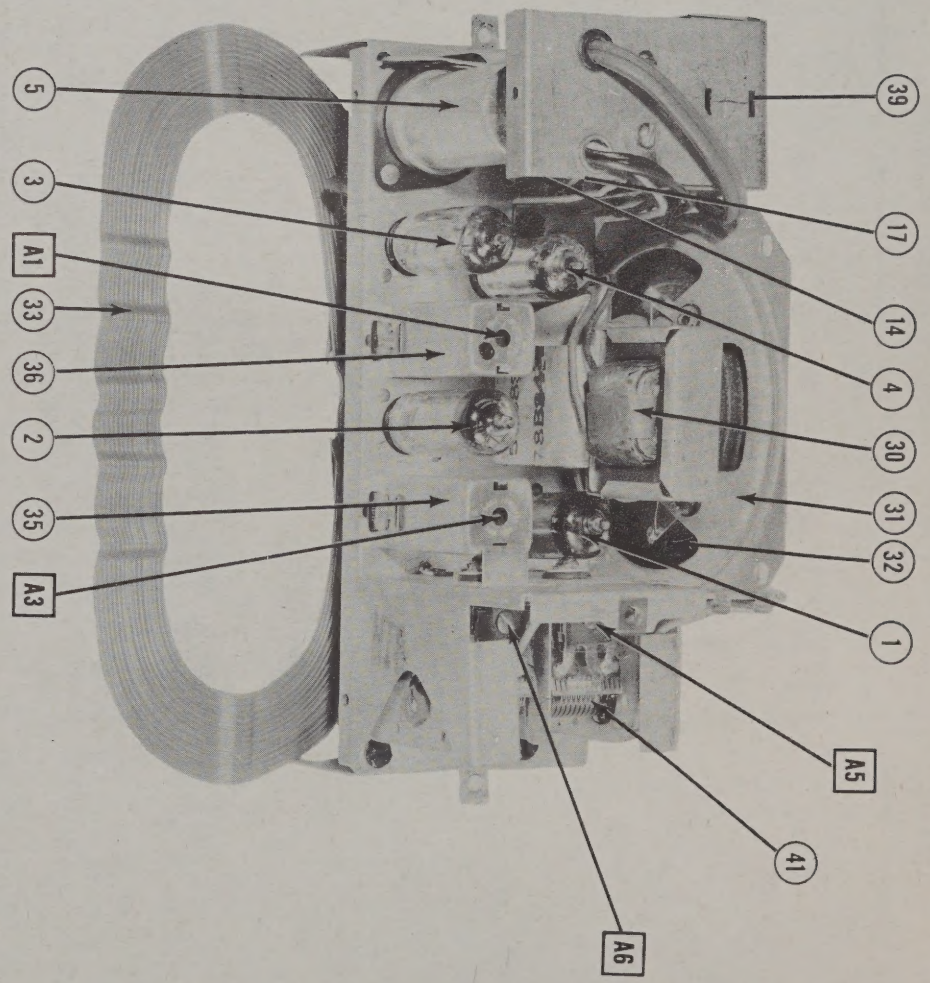
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ADMIRAL PART No.	IRC PART No.	IDENTIFICATION CODES	
18	100KΩ	½	60B27-104	BTS-100K	Br.-Blk.-Yl.	OSC. Grid.
19	10 Meg.	½	60B27-106	BTS- 10 Meg.	Br.-Blk.-Blue	IF Grid.
20	3.3 Meg.	½	60B27-335	BTS-3.3 Meg.	Or.-Or.-Grn.	AVC Network.
21	2700Ω	1	60B14-272	BTA-2700	Red-Vl.-Red	Filter
22	10 Meg.	½	60B27-106	BTS- 10 Meg.	Brn-Blk.- Blue	AF Grid.
23A	4.7 Meg.	½	*			AF Screen Dropping
B	1 Meg.	½				AF Plate Load
C	2.2 Meg.	½				Output Grid.
24	47Ω	1	60B14-470	BW-1-47	Yl.-Vl.-Blk.	Surge Limiter
25	2400Ω	2.5	61A5-3	ABA-2500 #		Filter-Voltage Dropping
26	2200Ω	½	60B26-222	BTS-2200	Red-Red-Red	Fil. String
27	390Ω	½	60B26-391	BW-½-390	Or.-White-Br.	" "
28	180Ω	½	60B26-181	BW-½-180	Br.-Gray-Br.	" "
29	120Ω	½	60B26-121	BW-½-120	Br.-Red-Br.	" "

* Items 12A, 12B, 12C, 23A, 23B and 23C are combined into one unit obtainable under Mfgrs. part No. 63A4-3

Set slider at 1250Ω from each end.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ADMIRAL PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
30	8000Ω	3.4Ω	480Ω	.6Ω	98A21	A-3878	T22847	A-2931	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			ADMIRAL PART No.	JENSEN PART No.	QUAM PART No.	
31	FIELD PM	VC IMP. 3.4Ω	78B34-2	ST-113 Mod. P4-X	4A07	
32	CONE DIA 4"	VC DIA 9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	ADMIRAL PART No.	MEISSNER PART No.	
33	Loop Ant.		1.5Ω	69B40		
34	OSC Coil	1.2Ω	5.5Ω	69A59		
35	Input IF	25Ω	25Ω	72B28-11	16-6668	
36	Output IF	25Ω	25Ω	"	16-6669	

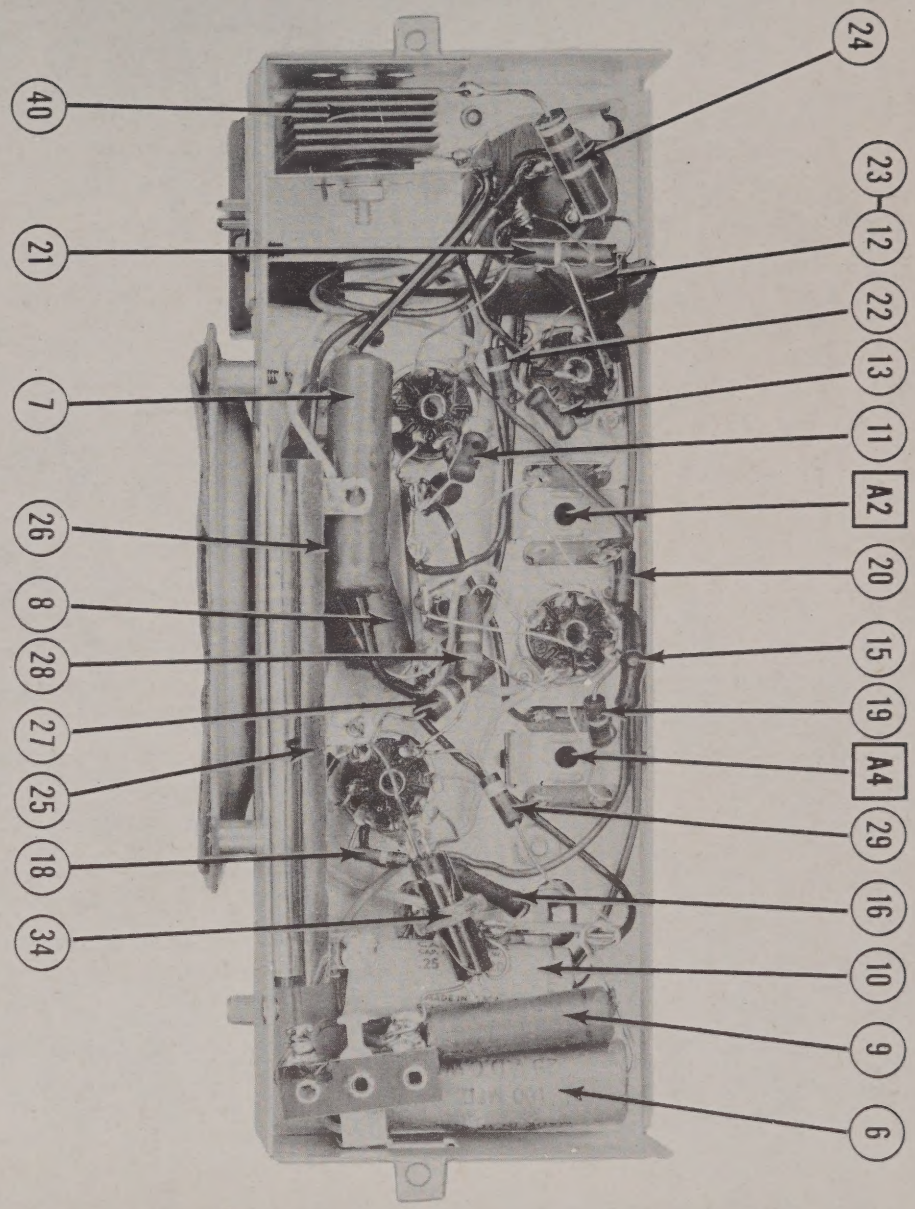
BATTERIES

ITEM No.	VOLTAGE	ADMIRAL PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
37	7.5V "A"	A47							
38	67.5V"B"	B67		467			XX45		

MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
39A	Switch	77A19-2	AC/DC & Battery ("N" Models)
B	"	77A19-1	" " ("UL" Models)
40	Rectifier	93A1-4	Selenium
41	2 Gang Var. Cap.	68B14	(32-457MMF, 28-135MMF)
	Cabinet	34D20-1	Model 5F11
	"	34D20-5	" 5F12
	Knob	33B30-1	Volume (Model 5F11)
	"	33B30-2	Tuning (" ")
	"	33B30-3	Volume (" 5F12)
	"	33B30-4	Tuning (" 5F12)

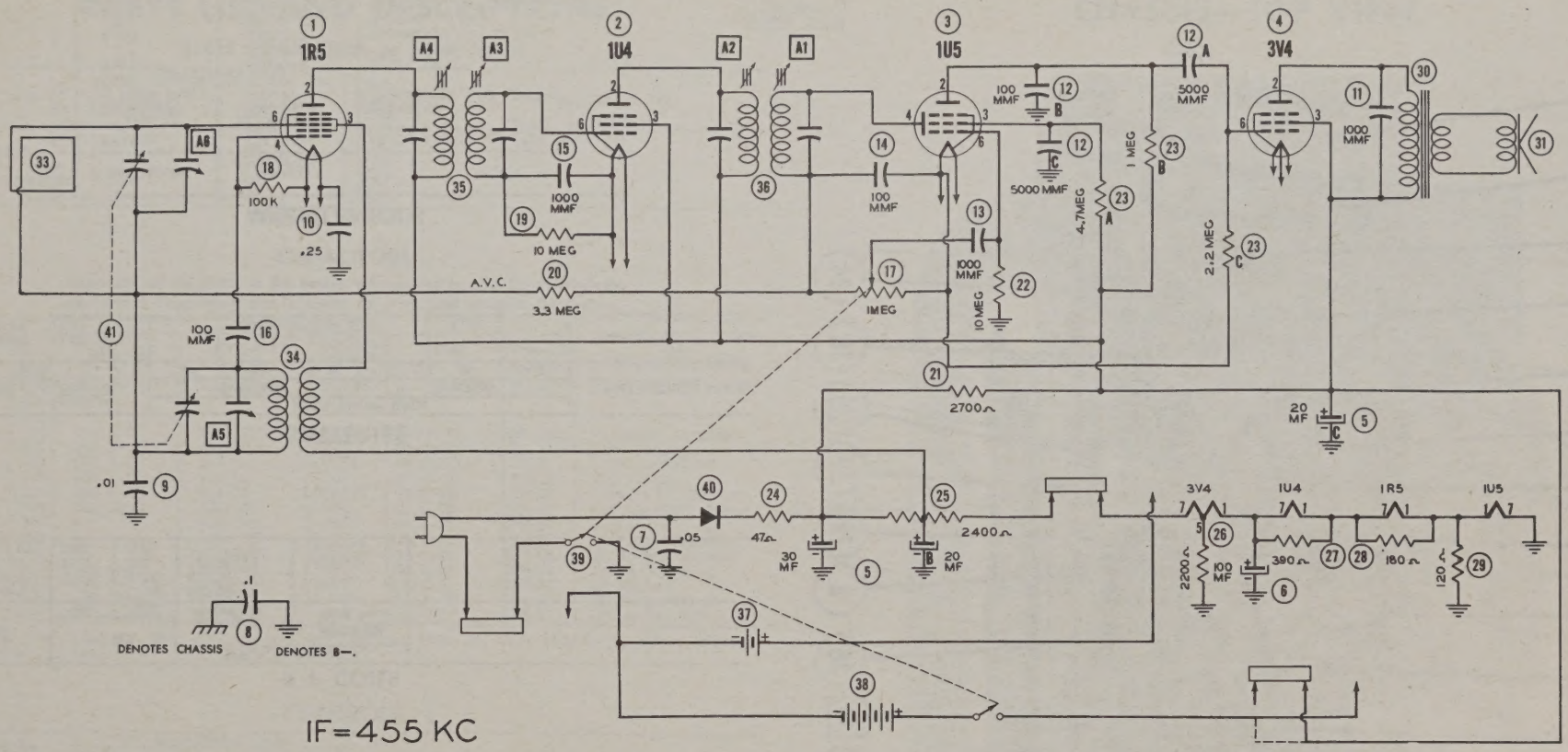
CHASSIS—BOTTOM VIEW



DATE 3/49-#495-1 SET #57-FOLDER #1

ADMIRAL MODEL 5F11

ADMIRAL MODEL 5F11



VOLTAGE AND RESISTANCE READINGS TAKEN IN AC-DC POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	1R5	1.4VDC	85VDC	65VDC	§-8.8VDC	1.4VDC	.1VDC	1.7VDC
2	1U4	1.7VDC	85VDC	85VDC	.1VDC	1.8VDC	.1VDC	4.2VDC
3	1U5	1.4VDC	8VDC	14.5VDC	.2VDC	1.4VDC	-.1VDC	0V
4	3V4	4.3VDC	82VDC	87VDC	0V	5.8VDC	.2VDC	7.3VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	1R5	*	+2.8K	+1.2K	100K	*	4.8 Meg.	*
2	1U4	*	+2.8K	+2.8K	5 Meg.	*	10 Meg.	*
3	1U5	*	+1 Meg.	+4 Meg.	1.2 Meg.	40Ω	10 Meg.	*
4	3V4	*	+3K	+2.8K	Inf.	*	2.2 Meg.	*

*DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.
+ MEASURED FROM JUNCTION OF ITEMS 40 & 24

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

ADMIRAL
CHASSIS 30A1

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The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

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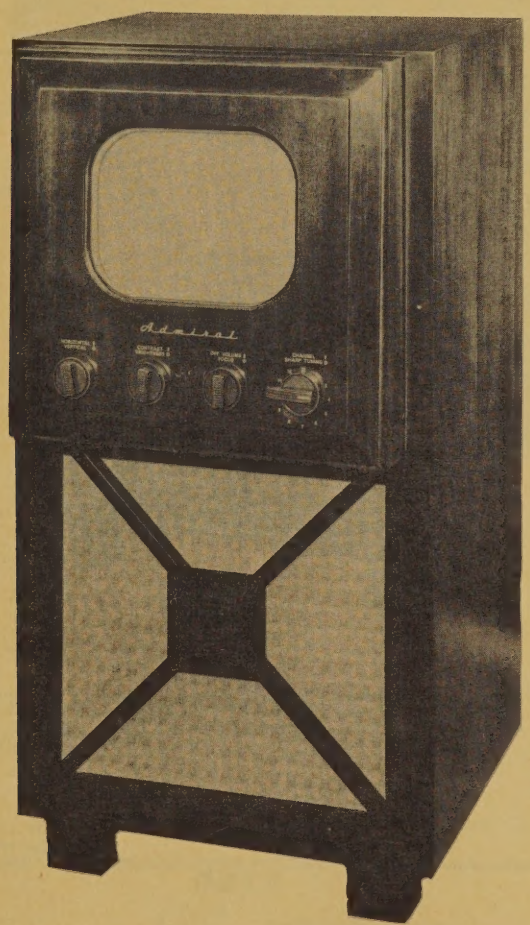

ADMIRAL
CHASSIS 30A1

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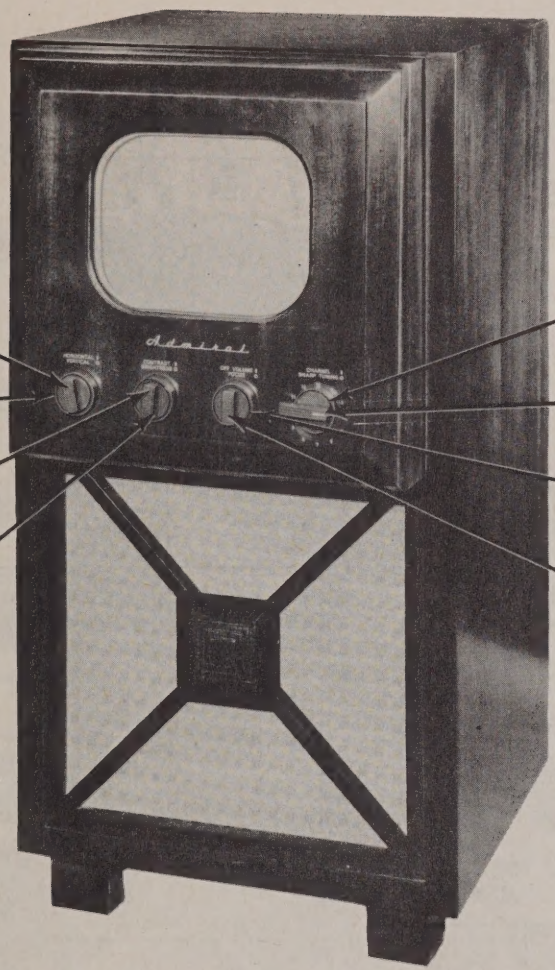
Date 3/49—No. 495-2 Set No. 57—Folder No. 2



ADMIRAL CHASSIS
30A1

TRADE NAME	Admiral, Model 30A14, 30A15, 30A16. (Chassis 30A1)
MANUFACTURER	Admiral Corporation, 3800 W. Cortland St., Chicago, Ill.
TYPE SET	Television Receiver
TUBES	Twenty-nine
POWER SUPPLY	110-120 Volts, 50-60 cycle AC. RATING 2.22 Amps. @ 117 Volts, 60 cycle AC.
TUNING RANGE—	Channels 2 through 13.

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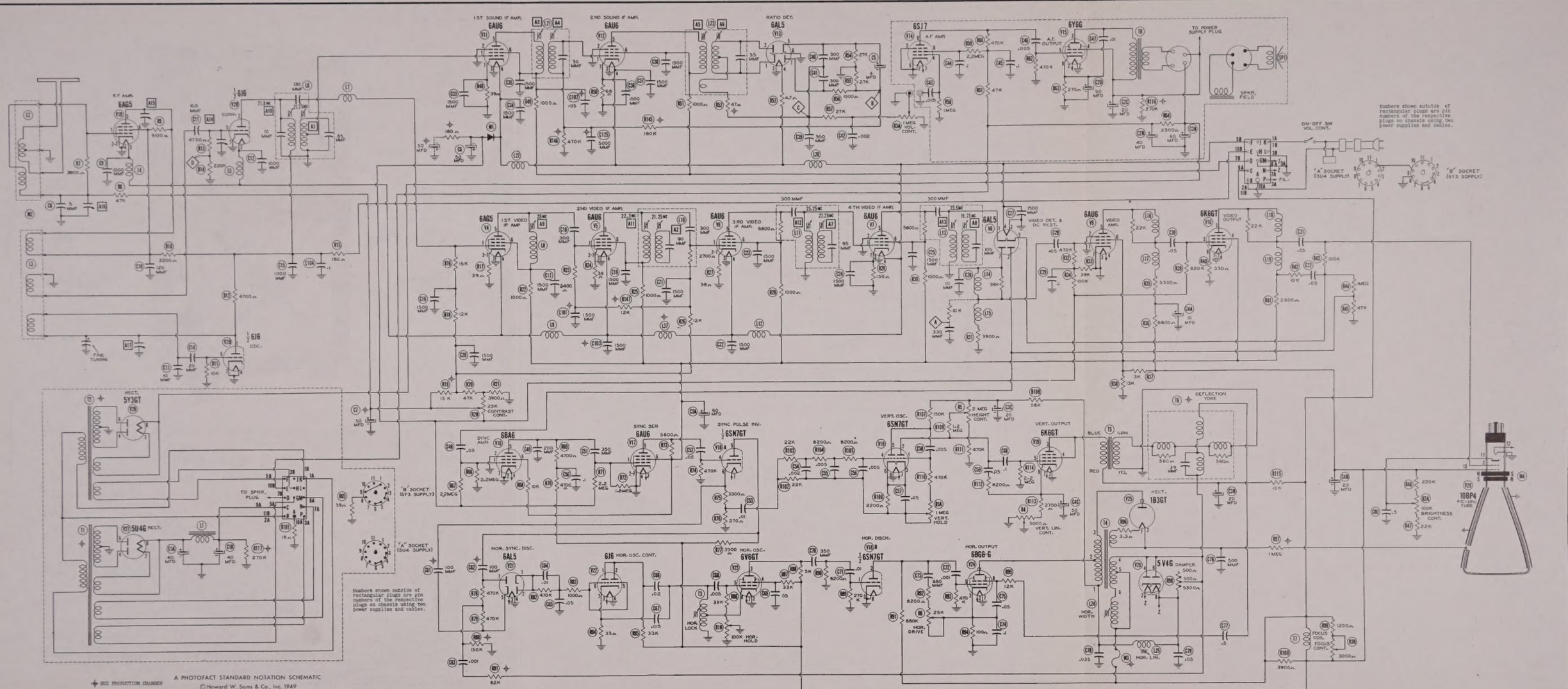
ADMIRAL CHASSIS
30A1
1ST SOUND IF AMP.
2ND SOUND IF AMP.
RATIO DET.
6AU6
6AL5
6SJ7
A.F. AMP.
6V6G
A.F. OUTPUT
TO POWER SUPPLY PLUG
SPKR. FIELD
ON-OFF SW VOL. CONT.
'A' SOCKET (5U4 SUPPLY)
'B' SOCKET (5Y3 SUPPLY)
Numbers shown outside of rectangular plugs are pin numbers of the respective plugs on chassis using two power supplies and cables.
RF AMP.
6AG5
CONV.
6J6
OSC.
FINE TUNING
1ST VIDEO IF AMP.
2ND VIDEO IF AMP.
3RD VIDEO IF AMP.
4TH VIDEO IF AMP.
VIDEO DET. & DC REST.
VIDEO AMP.
6K6GT
VIDEO OUTPUT
RECT.
5Y3GT
5U4G
CONTRAST CONT.
SYNC AMP.
6BA6
SYNC SEP.
SYNC PULSE INV.
6SN7GT
VERT. OSC.
VERT. OUTPUT
6K6GT
HEIGHT CONT.
VERT. HOLD
VERT. LIN. CONT.
DEFLECTION YOKE
BLUE
GRN
RED
YEL
1B3GT
5V4G
DAMPER
HOR. WIDTH
HOR. LIN.
FOCUS COIL
FOCUS CONT.
BRIGHTNESS CONT.
10BP4
PIC. TUBE
HOR. SYNC. DISC.
HOR. OSC. CONT.
HOR. OSC.
HOR. DISCH.
HOR. OUTPUT
6BG6-G
HOR. LOCK
HOR. HOLD
HOR. DRIVE
TO SPKR. PLUG
SEE PRODUCTION CHANGES
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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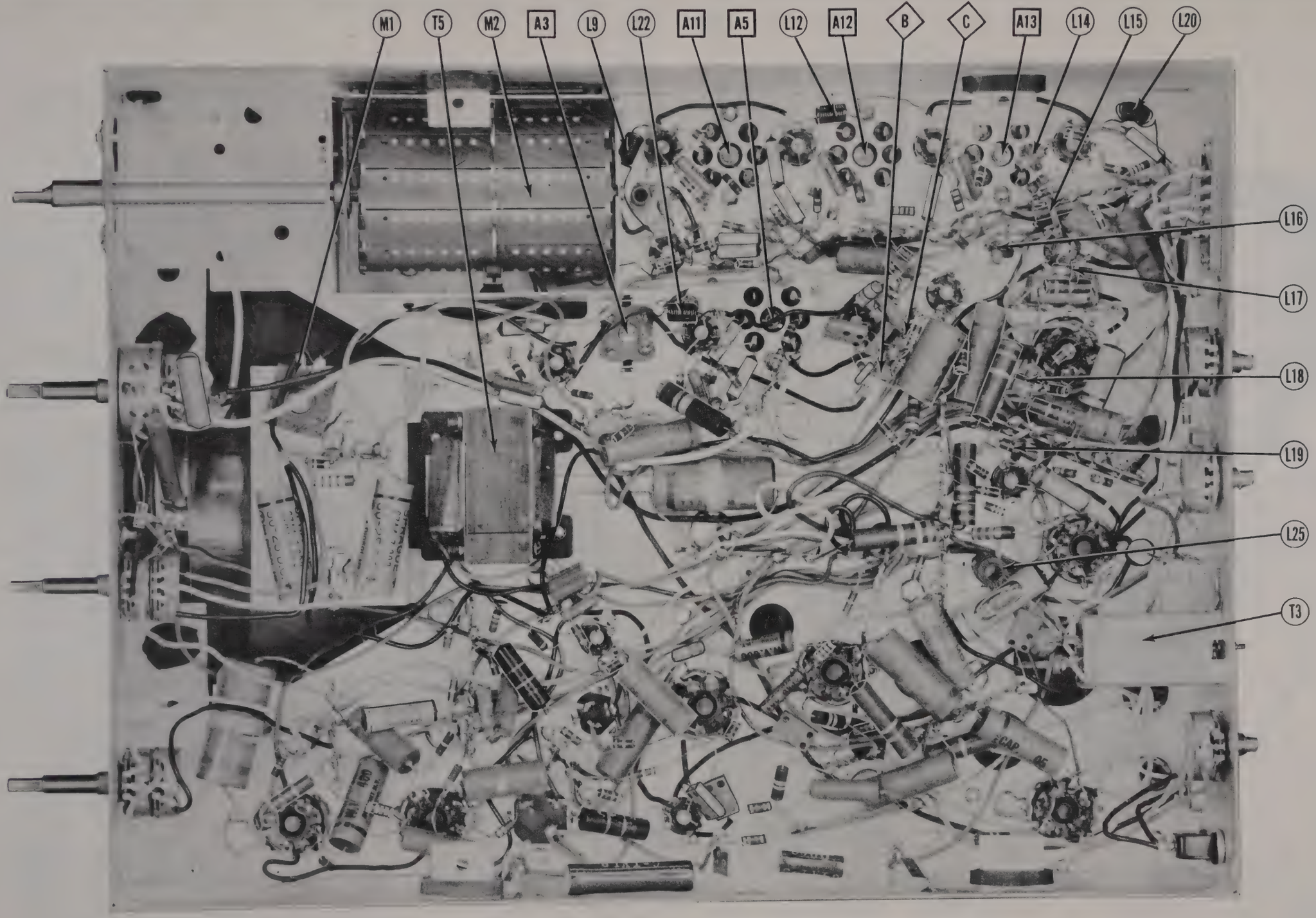
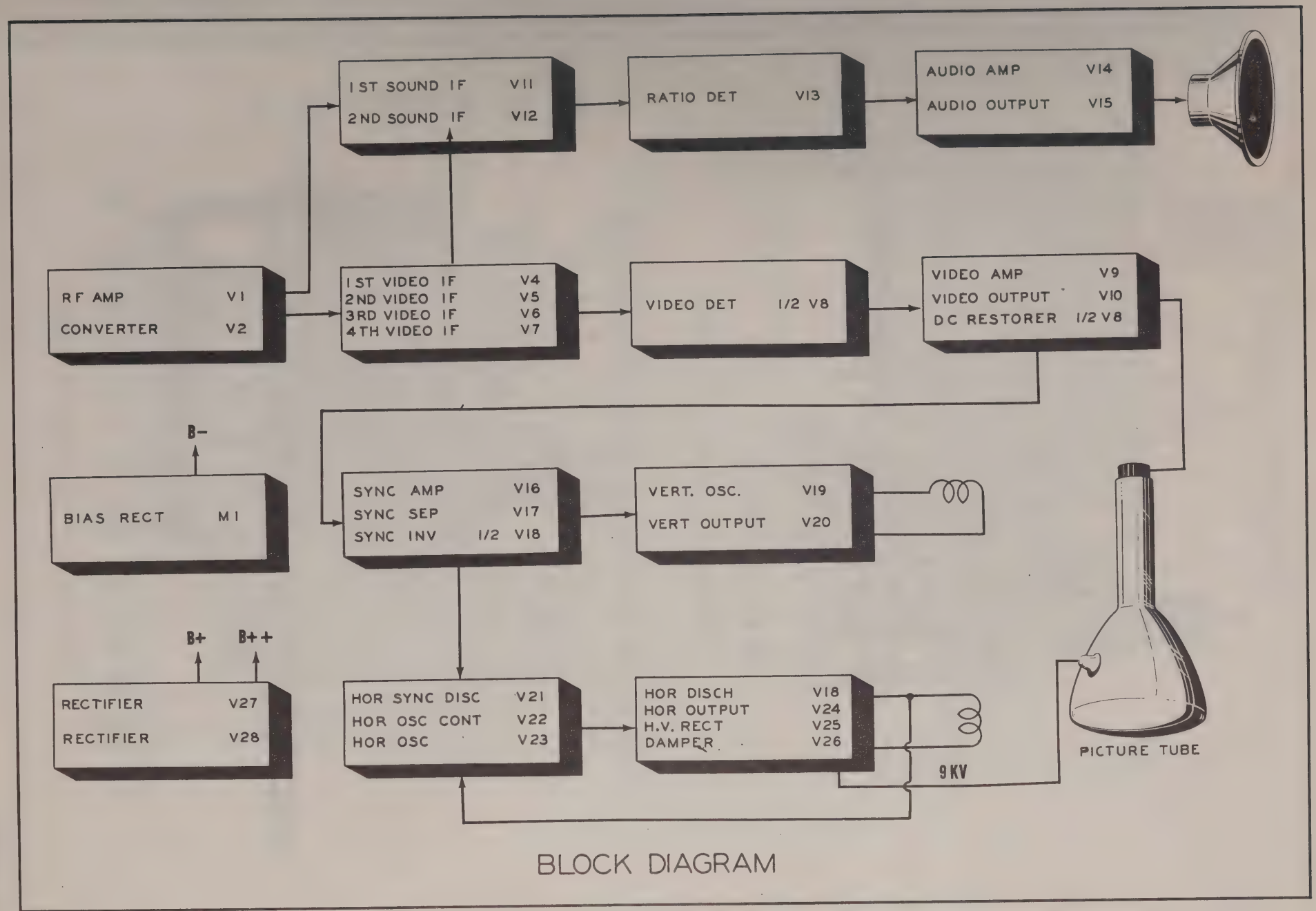
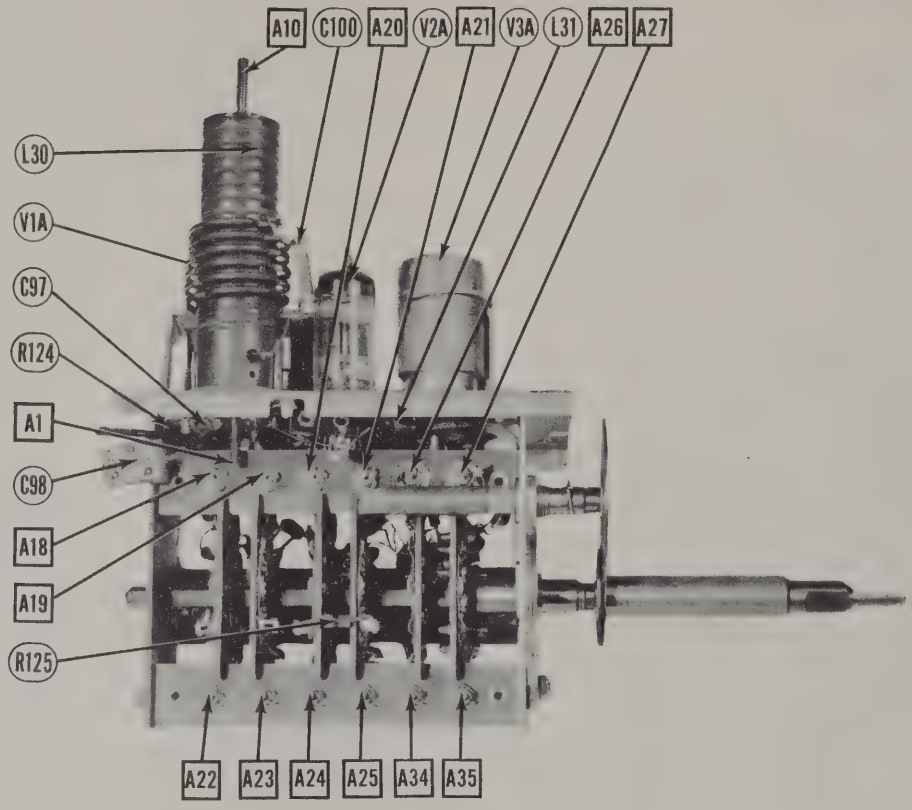
CHASSIS TOP VIEW



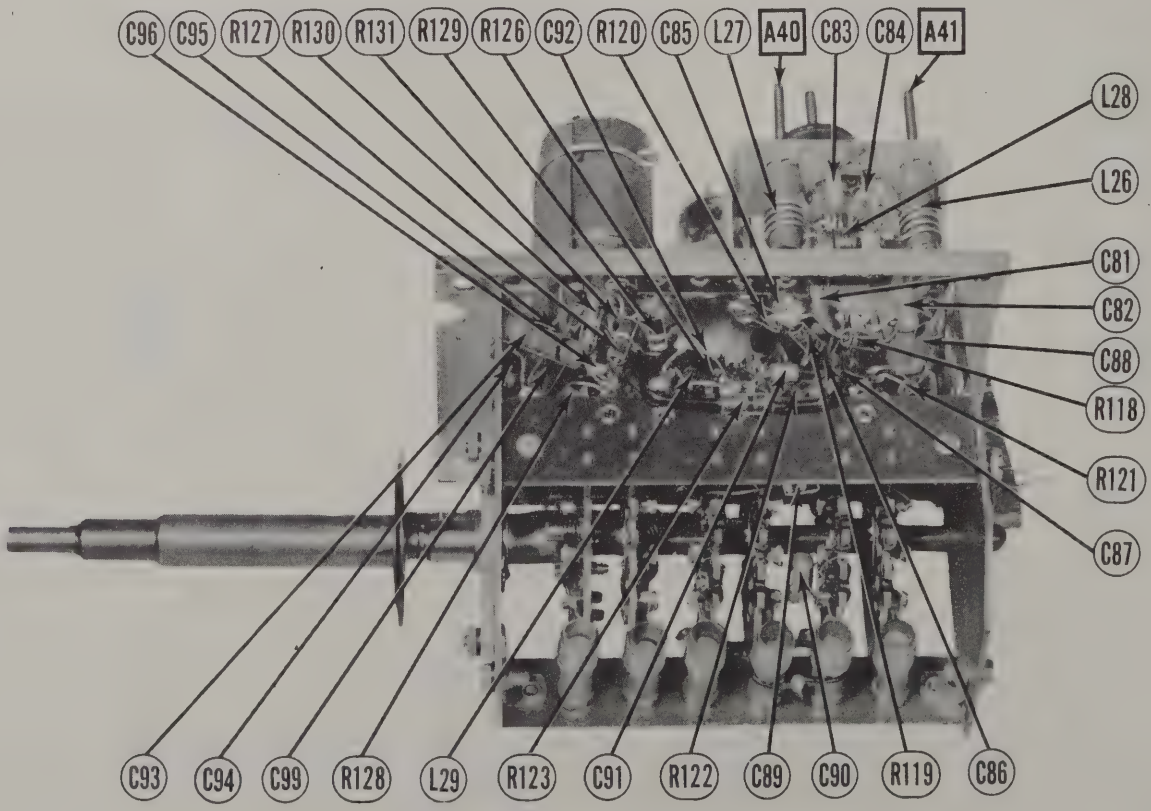
CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION



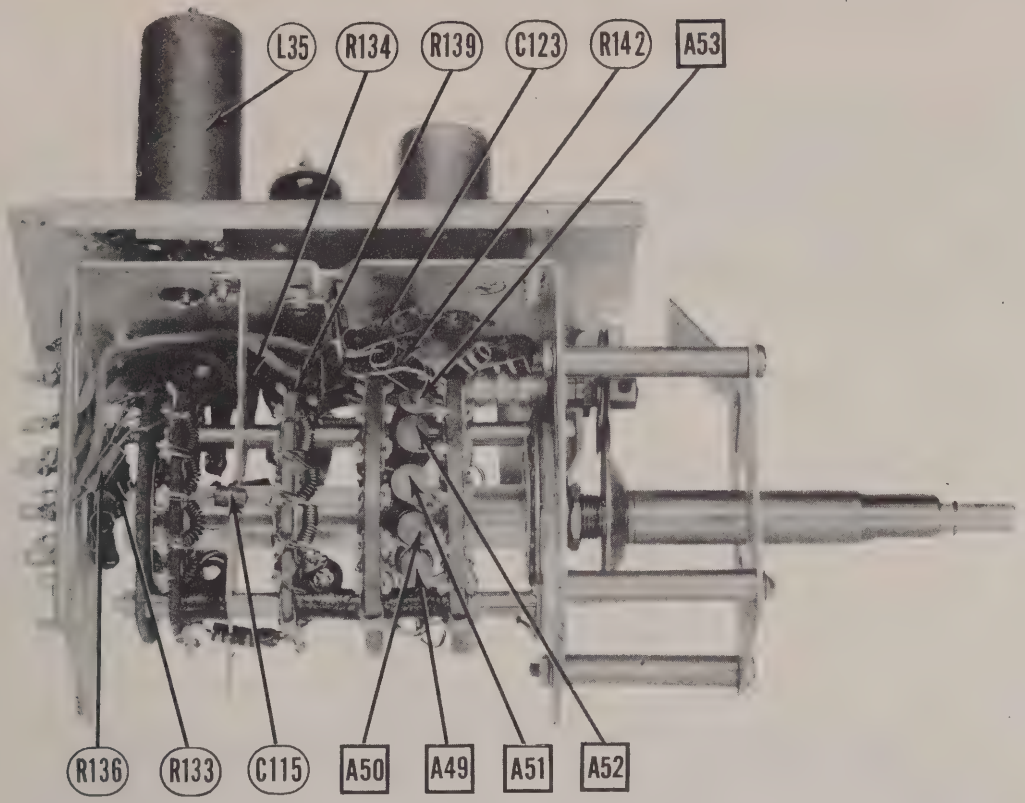
BLOCK DIAGRAM



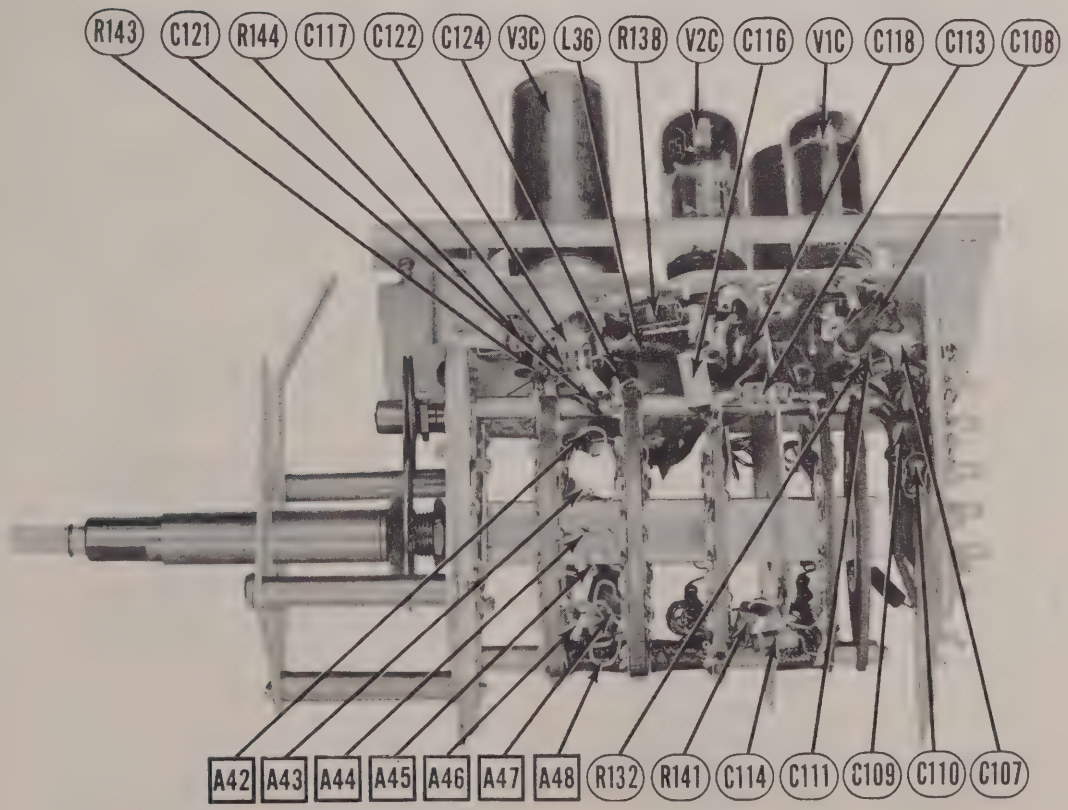
TUNER A1528-LEFT SIDE



TUNER A1528 RIGHT SIDE



TUNER 94C9-2 LEFT SIDE



TUNER 94C9-2 RIGHT SIDE

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Set the contrast control for -3 volts. Measure from arm of control to ground. This setting is the same for all the IF alignment.

Connect 10KΩ resistor in series with a 330MMF. capacitor from the junction of L14 & L15 to ground. (Capacitor on ground side as shown on schematic). Connect the DC probe of the VTVM to Point Ⓐ and the common lead to ground.

SOUND & VIDEO IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1	Direct	High side to one ant. terminal. Low side to chassis.	21.25MC	2	DC probe to Point Ⓐ. Common lead to chassis	A1,A2	Adjust for minimum.
2	"	"	"	"	DC probe to Point Ⓑ. Common to chassis.	A3,A4, A5	Adjust for maximum deflection.
3	"	"	"	"	DC probe to Point Ⓒ. Common lead to chassis	A6	Adjust for zero reading. A positive and negative reading will be found on either side of correct setting.
4	"	"	27.25MC	"	DC probe to Point Ⓐ. Common lead to chassis	A7	Adjust for minimum.
5	"	"	19.75MC	"	"	A8	Adjust for minimum.
6	"	"	25.0MC	"	"	A9	Adjust for maximum deflection.
7	"	"	21.8MC	"	"	A10	"
8	"	"	22.3MC	"	"	A11	"
9	"	"	25.25MC	"	"	A12	"
10	"	"	23.5MC	"	"	A13	"

OVERALL IF RESPONSE CHECK

The signal injection point for this response check varies with the type tuner used. If this check is to be made, determine which tuner is being used and inject signal as follows:

Tuner 94C8-2. Remove the RF, Mixer & Osc. coil clip of any band and switch to that band. Inject signal through 5000 MMF to the small loop of wire (Point Ⓓ) located between the 6AG5 (V1B) the 6J6 (V2B) tubes on top of tuner chassis.

Tuner A1528. Injection of signal for this style tuner is accomplished by means of a dummy mixer tube. Refer to Fig. 1 for construction of this dummy. Remove 6J6 oscillator tube.

Tuner 94C9-2. To inject signal in this tuner, construct dummy mixer tube as per Fig. 2. Also remove 6C4 (V3B) oscillator tube while making IF response check.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11	5000MMFD	See instructions above	24MC (10MC sweep)	19.75MC 21.25MC 25.75MC 27.25MC	Any	Vertical amp. to Point Ⓐ. Low side to chassis.		Check markers on response pattern and osc that they appear at proper points as per Fig. 3. If not, make slight re-adjustments of A9,A10,A11, A12 & A13. Note: Markers of 19.75MC, 21.25 MC & 27.25MC will disappear at their respecitive "notches" when traps are correctly adjusted.

RF AMP & MIXER ALIGNMENT (TUNER 94C8-2)

Set contrast control to -1.5 volts. Measure from arm of control to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12	Direct	Across antenna terminals.	207MC (10MC sweep)	205.25MC* 209.75MC†	12	Vertical amp. through 10KΩ to Point Ⓓ. Low side to chassis.	A14,A15 A16	Adjust for flat top pattern with markers appearing as per Fig. 4.
13	Direct	" "	213MC (10MC sweep)	211.25MC* 215.75MC†	13			Check marker for all channels. If maximum reception is desired for one specific channel, adjust A14, A15 & A16 on that channel and then check all other channels to make certain that they have not been appreciably affected.
			201MC (10MC sweep)	199.25MC* 203.75MC†	11			
			195MC (10MC sweep)	193.25MC* 197.75MC†	10			
			189MC (10MC sweep)	187.25MC* 191.75MC†	9			
			183MC (10MC sweep)	181.25MC* 185.75MC†	8			
			177MC (10MC sweep)	175.25MC* 179.75MC†	7			
			85MC (10MC sweep)	83.25MC* 87.75MC†	6			
			79MC (10MC sweep)	77.25MC* 81.75MC†	5			
			69MC (10MC sweep)	67.25MC* 71.75MC†	4			
			63MC (10MC sweep)	61.25MC* 65.75MC†	3			
			57MC (10MC sweep)	55.25MC* 59.75MC†	2			

* Picture carrier
† Sound carrier

ALIGNMENT INSTRUCTIONS (CONT.)

OSC. ALIGNMENT (TUNER 94C8-2)

Complete alignment of the oscillator circuit may not be necessary. This is determined by checking to see that a zero reading is obtained for each channel when the fine tuning control is turned through the midpoint of its range. (Connect signal generator and VTVM as in steps 14 & 15. Sound carrier frequencies are listed in Step 15). If the majority of the channels seem to need oscillator alignment this sometimes may be done in one operation-Step 14, by adjusting A17. It should be noted that this is an all channel adjustment and should not be adjusted for individual channels. If Step 14 fails to align the oscillator circuit sufficiently, it will be necessary to adjust the oscillator coil slugs. These are accessible one channel at a time. Turn the fine tuning control to its extreme counter-clockwise position which automatically centers this control. Note that the oscillator slugs are now available one by one, as the channel switch is rotated, through the small hole in the front panel of the tuner sub-chassis. Follow Step 15 for alignment frequencies.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
14	Direct	High side to one ant. terminal. Low side to chassis.	215.75MC	13	DC probe to Point ◇. Common lead to chassis	A17	Adjust for zero reading between positive and negative peaks with finetuning control at midpoint. Rotate channel switch and adjust oscillator slugs for individual channels. Then repeat Step 14.
15	Direct	"	215.75MC	13	"		
			209.75MC	12	"		
			203.75MC	11	"		
			197.75MC	10	"		
			191.75MC	9	"		
			185.75MC	8	"		
			179.75MC	7	"		
			87.75MC	6	"		
			81.75MC	5	"		
			71.75MC	4	"		
			65.75MC	3	"		
			59.75MC	2	"		

RF AMP. & MIXER ALIGNMENT (TUNER A1528)

Set fine tuning to mid-capacity point and contrast control to -1.5 volt reading. (Measure from arm of control to ground.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12	Direct	Across ant. terminals.	213MC (10MC sweep)	211.25MC* 215.75MC†	13	Vertical amp. through 10KΩ to Point ◇. Low side to chassis.	A18,A19 A20,A21	Adjust for flat top response pattern and markers falling as Per Fig. 4.
13	Direct	"	207MC (10MC sweep)	205.25MC* 209.75MC†	12	"		Check response pattern as per Fig. 4.
			201MC (10MC sweep)	199.25MC* 203.75MC†	11	"		"
			195MC (10MC sweep)	193.25MC* 197.75MC†	10	"		
			189MC (10MC sweep)	187.25MC* 191.75MC†	9	"		
			183MC (10MC sweep)	181.25MC* 185.75MC†	8	"		
			177MC (10MC sweep)	175.25MC* 179.75MC†	7	"		
			85MC (10MC sweep)	83.25MC* 87.75MC†	6	"	A22,A23 A24,A25	Adjust for flat top response pattern with markers appearing as per Fig. 4.
			79MC (10MC sweep)	77.25MC* 81.75MC†	5	"		Check response pattern as per Fig. 4.
		*Picture Carrier †Sound Carrier	69MC (10MC sweep)	67.25MC* 71.75MC†	4	"		"
			63MC (10MC sweep)	61.25MC* 65.75MC†	3	"		"
			57MC (10MC sweep)	55.25MC* 59.75MC†	2	"		"

OSC. ALIGNMENT (TUNER A1528)

Set fine tuning control to mid-capacity point.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
14	Direct	High side to one ant. terminal. Low side to chassis.	215.75MC	13	DC probe to Point ◇. Low side to chassis	A26,A27	Adjust for zero reading between positive and negative peaks.
15			209.75MC	12	"	A28	"
			203.75MC	11		A29	
			197.75MC	10		A30	
			191.75MC	9		A31	
			185.75MC	8		A32	
			179.75MC	7		A33	
			87.75MC	6		A34,A35	
			81.75MC	5		A36	
			71.75MC	4		A37	
			65.75MC	3		A38	
			59.75MC	2		A39	

Wave traps A40 & A41 are used for specific types of interference and their alignment will depend upon the type encountered.

With the receiver tuned to the channel having the interference, set fine tuning control until interference is at maximum. Adjust A40 & A41 for minimum interference in the picture and sound keeping both cores at approximately the same relative position. Turn one core ½ turn and adjust the other for minimum interference.

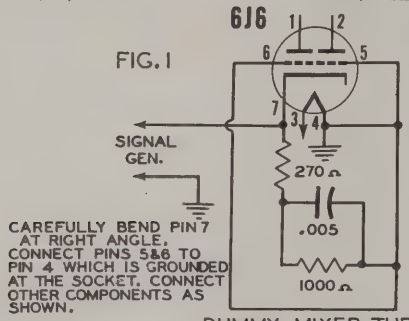
ALIGNMENT INSTRUCTIONS (CONT.)

OSC. ALIGNMENT (TUNER 94C9-2)

The RF Amplifier and mixer lines of this tuner are very stable and normally should never require adjustment.
Set tuning control at center of its range during alignment of the oscillator circuit. The osc. adjustments are independent of each other and only those channels out of alignment need be adjusted.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
12	Two 100Ω carbon res.	Insert 100Ω resistor in series with each generator lead and connect across the antenna terminals.	215.75MC (No Mod.)	13	DC probe to Point (B). Low side to chassis	A42	Expand or compress coil for maximum deflection. Signal generator must be set very accurately.
13	"	"	209.75MC	12	"	A43	"
14	"	"	203.75MC	11	"	A44	"
15	"	"	197.75MC	10	"	A45	"
16	"	"	191.75MC	9	"	A46	"
17	"	"	185.75MC	8	"	A47	"
18	"	"	179.75MC	7	"	A48	"
19	"	"	87.75MC	6	"	A49	Adjust for maximum deflection.
20	"	"	81.75MC	5	"	A50	"
21	"	"	71.75MC	4	"	A51	"
22	"	"	65.75MC	3	"	A52	"
23	"	"	59.75MC	2	"	A53	"

FIG. 1



DUMMY MIXER TUBE

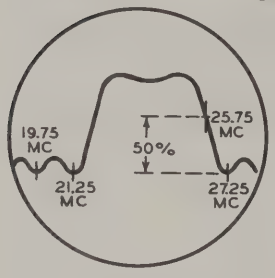


FIG. 3

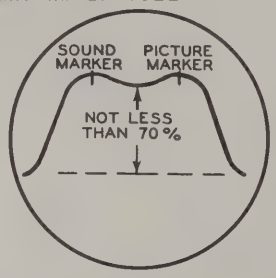
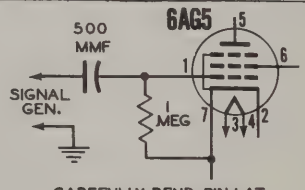
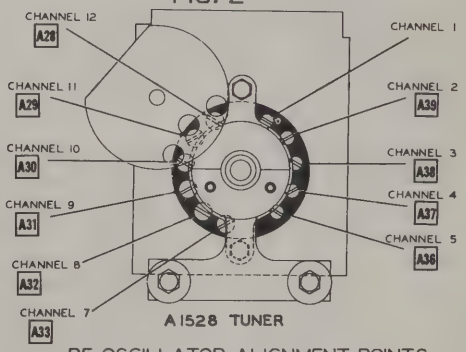


FIG. 4

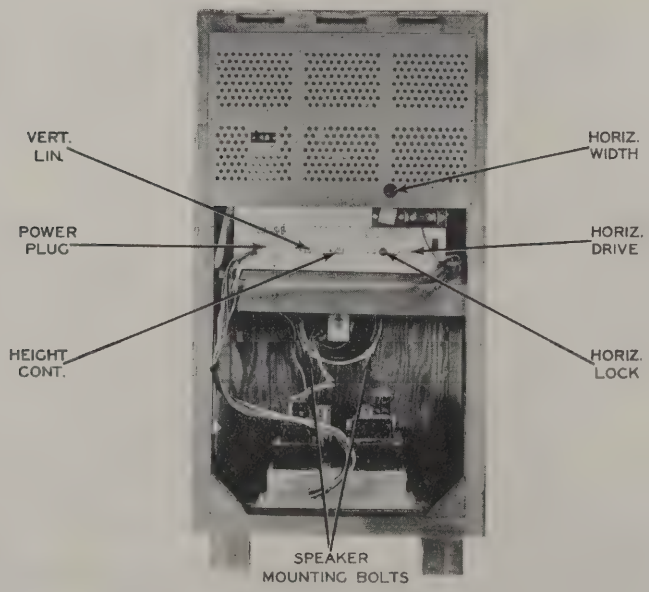


DUMMY MIXER TUBE

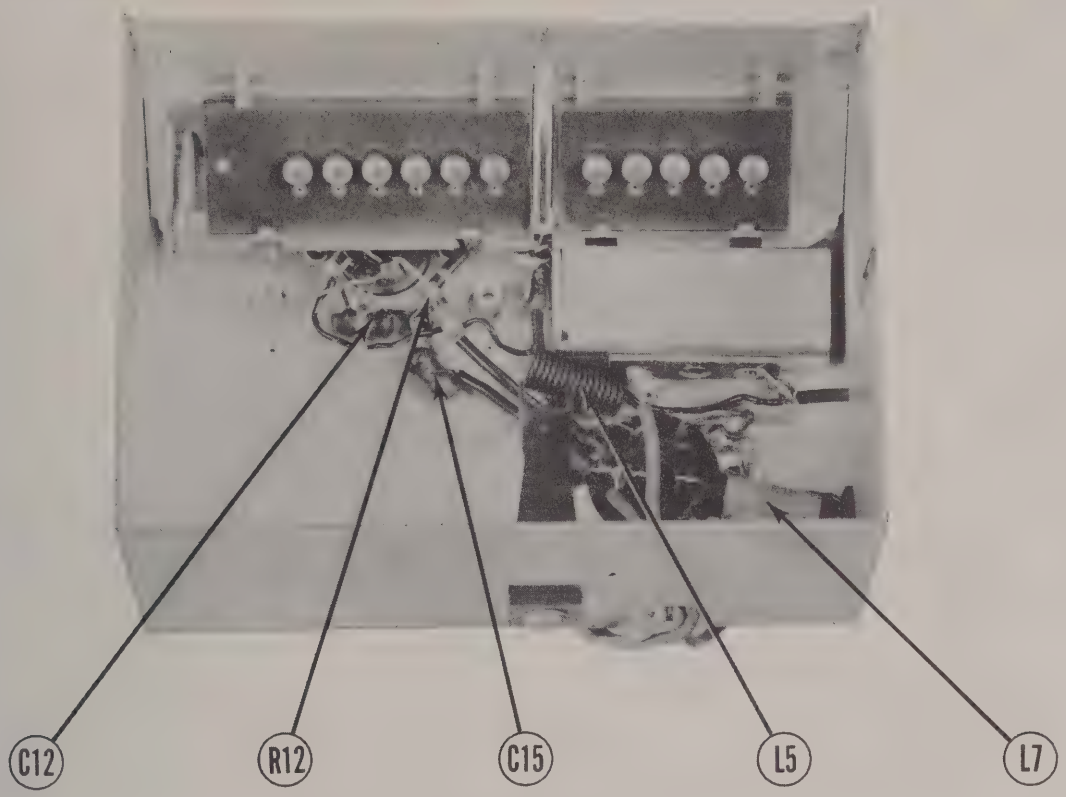
FIG. 2



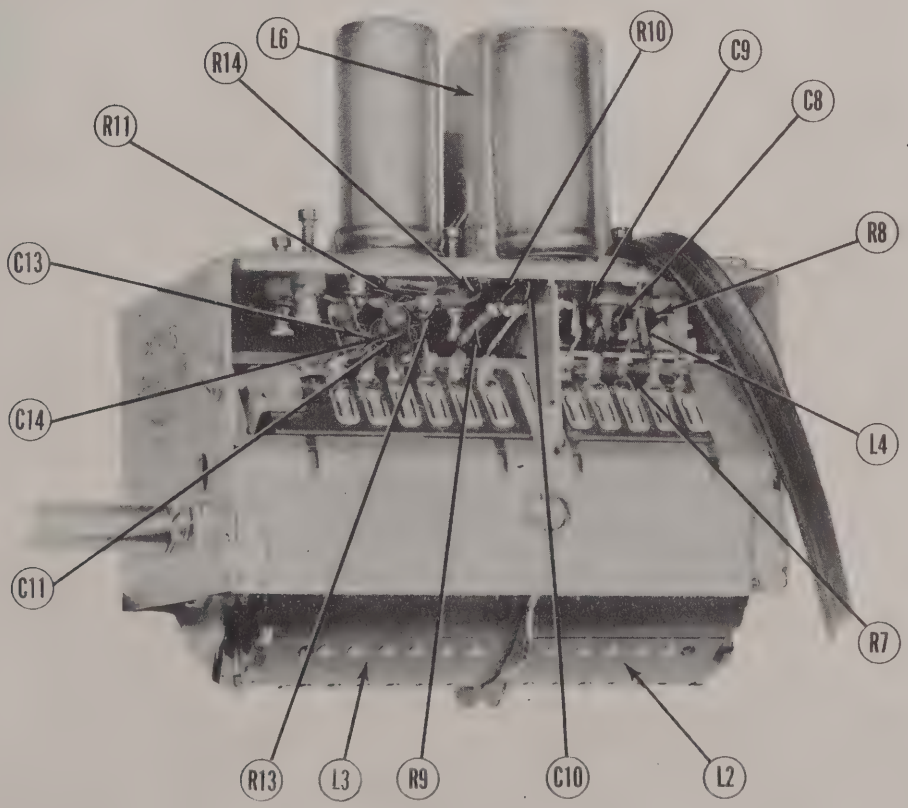
RF OSCILLATOR ALIGNMENT POINTS



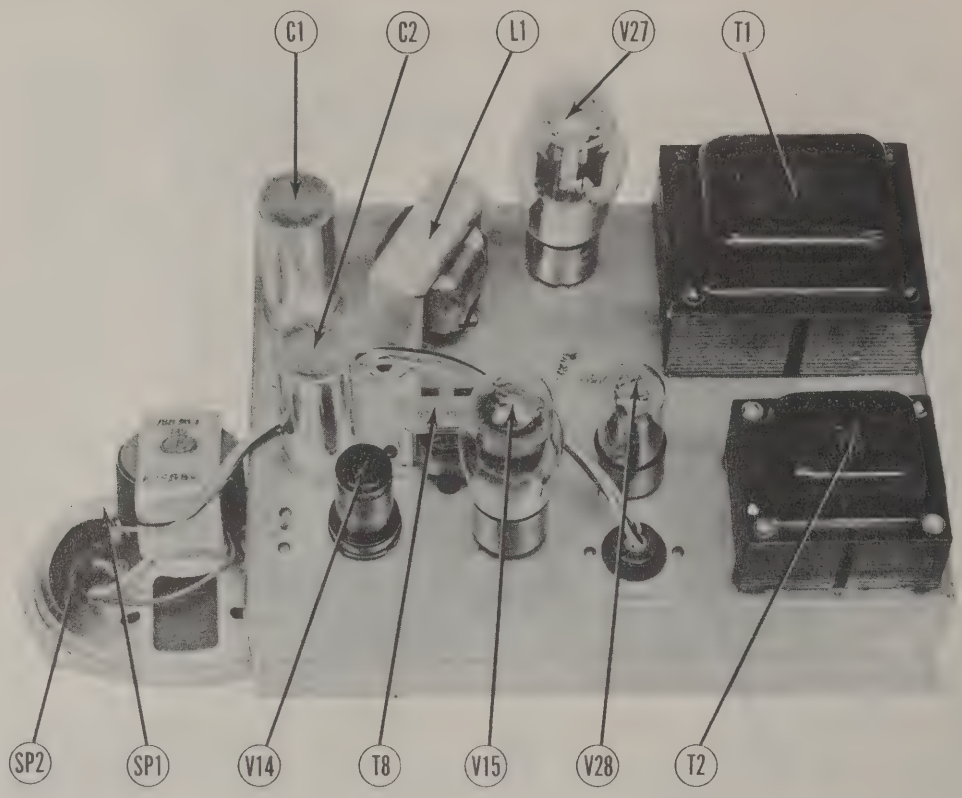
CABINET-REAR VIEW



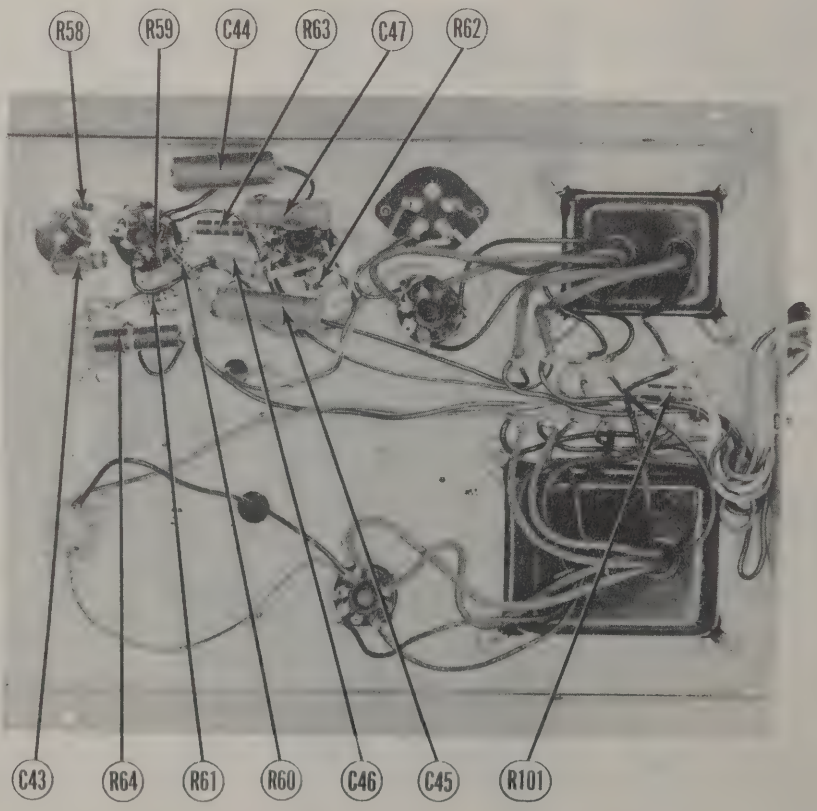
TUNER 94C8-2 LEFT SIDE



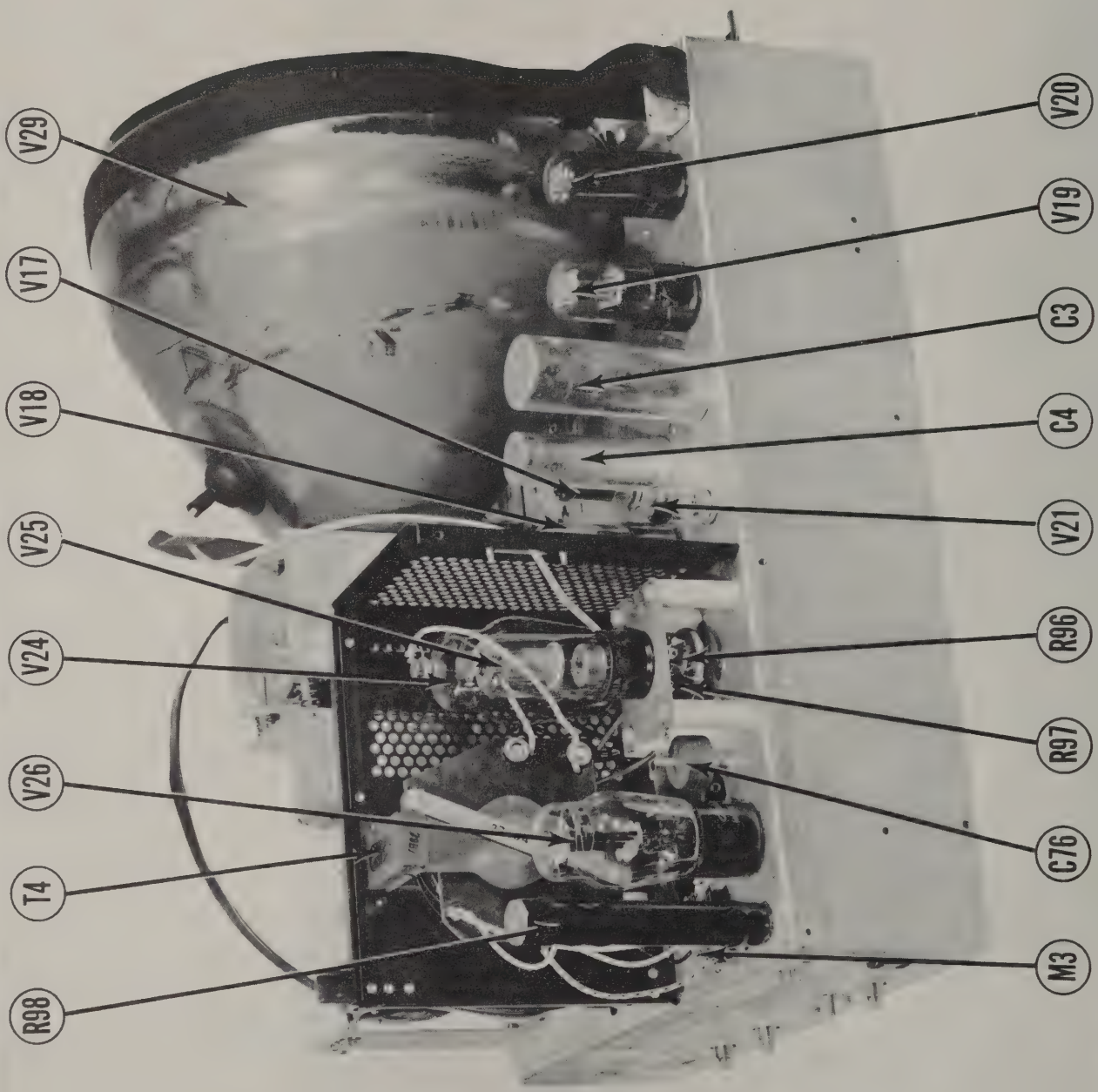
TUNER 94C8-2 RIGHT SIDE



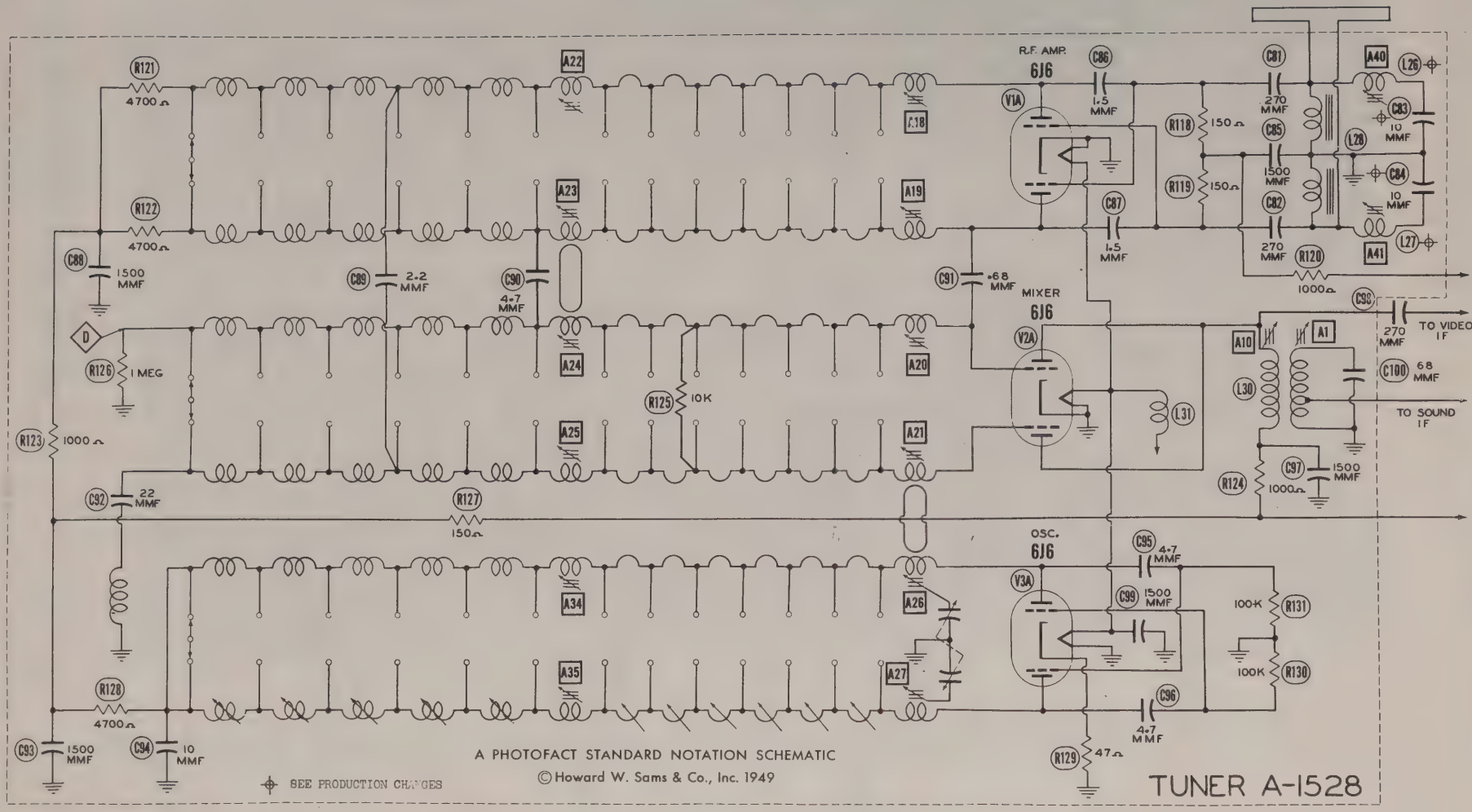
POWER SUPPLY CHASSIS-TOP VIEW



POWER SUPPLY CHASSIS-BOTTOM VIEW



CHASSIS TOP VIEW


R.F. AMP.
6J6
V1A
MIXER
6J6
V2A
OSC.
6J6
V3A
R121 4700Ω
R122 4700Ω
R123 1000Ω
R124 1000Ω
R125 10K
R126 1 MEG
R127 150Ω
R128 4700Ω
R129 47Ω
R130 100K
R131 100K
R118 150Ω
R119 150Ω
R120 1000Ω
C81 270 MMF
C82 270 MMF
C83 10 MMF
C84 10 MMF
C85 1500 MMF
C86 1.5 MMF
C87 1.5 MMF
C88 1500 MMF
C89 2.2 MMF
C90 4.7 MMF
C91 .68 MMF
C92 22 MMF
C93 1500 MMF
C94 10 MMF
C95 4.7 MMF
C96 4.7 MMF
C97 1500 MMF
C98 270 MMF
C99 1500 MMF
C100 68 MMF
L26
L27
L28
L30
L31
TO VIDEO IF
TO SOUND IF
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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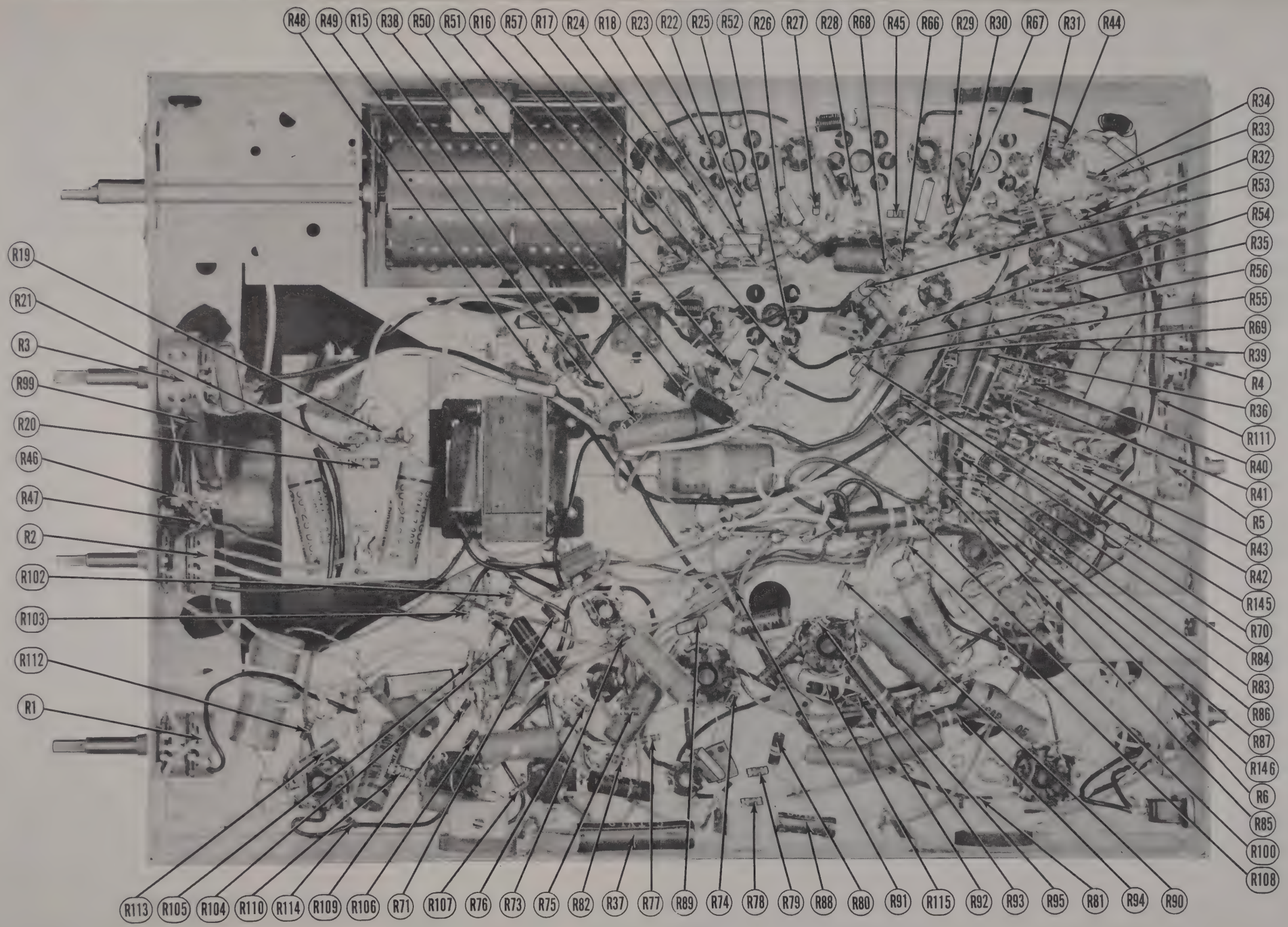
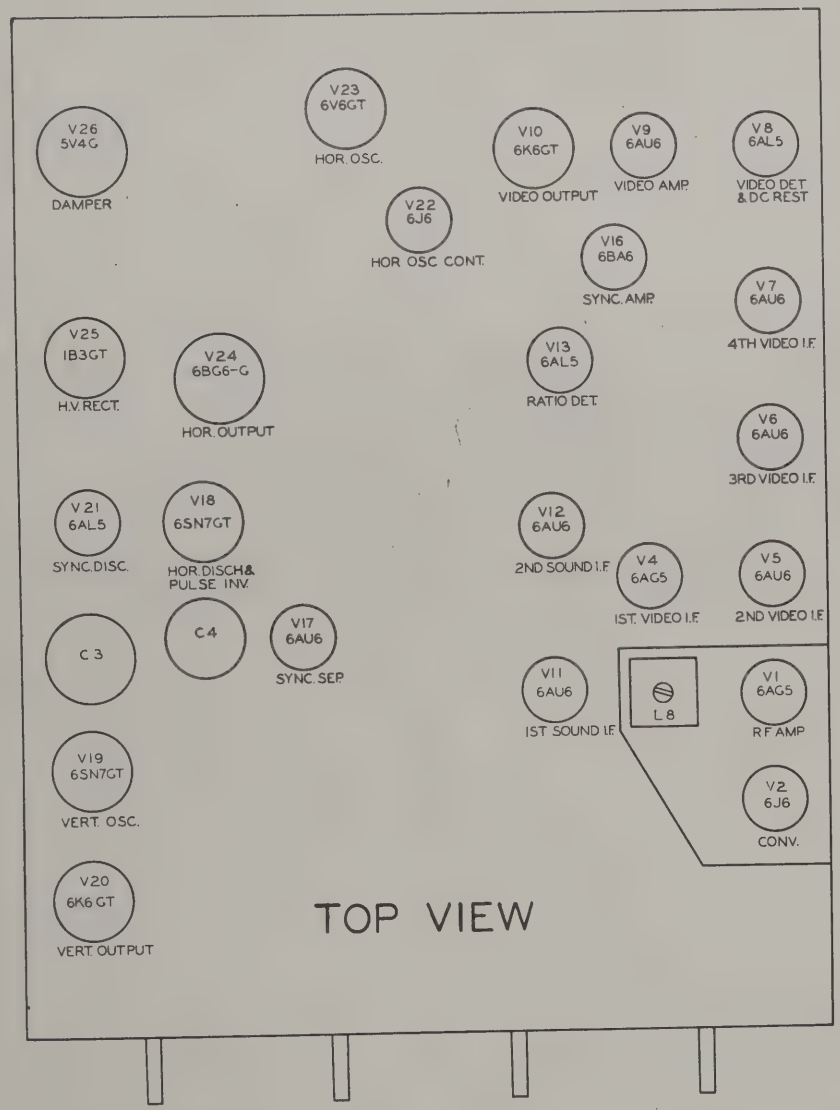
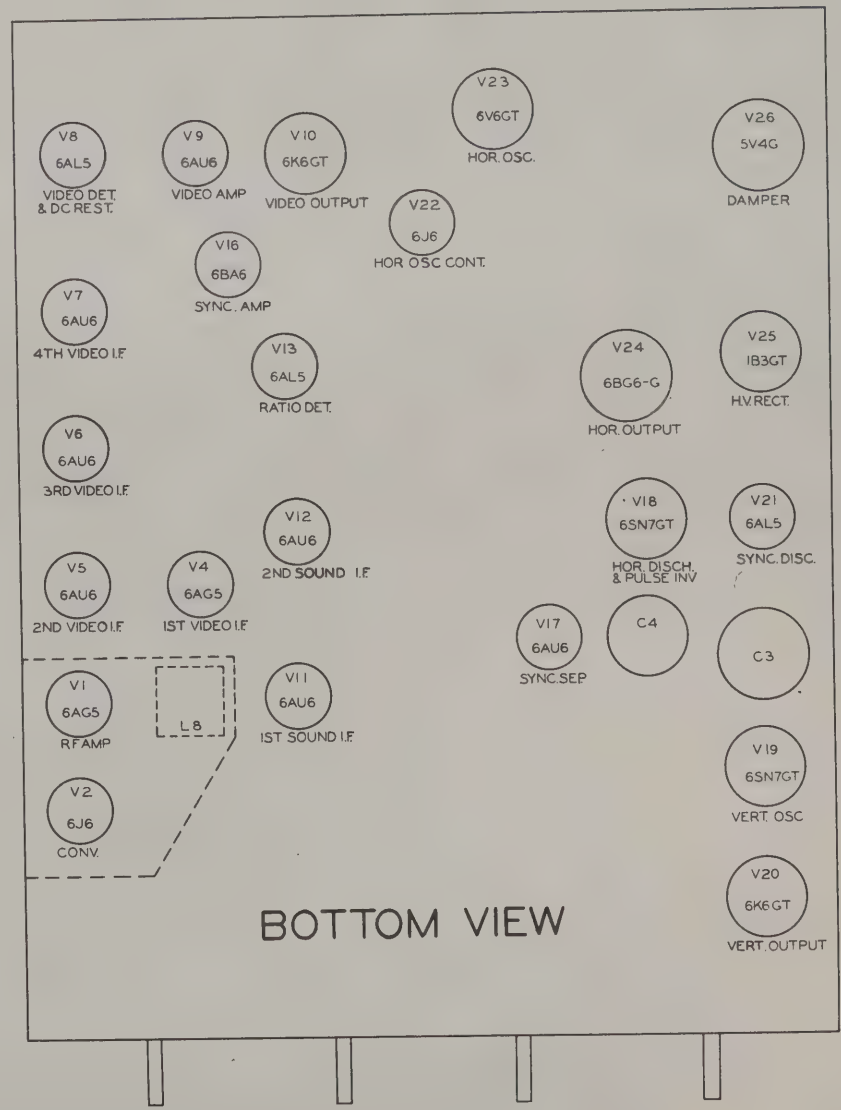
SEE PRODUCTION CHANGES
TUNER A-1528

CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION





TUBE PLACEMENT CHART

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
V 1B	6AG5	-.9VDC	0V.	6.3VAC	0V.	125VDC	125VDC	0V.	-	-
V 2B	6J6	80VDC	143VDC	6.3VAC	0V.	-2.2VDC	-5.5VDC§	0V.	-	-
V 3	6J6	USED IN TUNER A1582								
V 4	6AG5	-.9VDC	.4VDC	0V.	6.3VAC	125VDC	125VDC	.4VDC	-	-
V 5A	6AU6	-.9VDC	0V.	0V.	6.3VAC	130VDC	130VDC	.3VDC	-	-
V 6A	6AU6	-.9VDC	0V.	0V.	6.3VAC	100VDC	130VDC	.2VDC	-	-
V 7	6AU6	0V.	0V.	0V.	6.3VAC	105VDC	130VDC	.9VDC	-	-
V 8	6AL5	0V.	0V.	0V.	6.3VAC	.7VDC	0V.	-4.8VDC	-	-
V 9	6AU6	-.6VDC	0V.	0V.	6.3VAC	270VDC	135VDC	0V.	-	-
V 10	6K6GT	-7.7VDC	6.3VAC	105VDC	135VDC	-1.4VDC	20VDC	0V.	50VDC	-
V 11	6AU6	0V.	0V.	0V.	6.3VAC	140VDC	140VDC	.3VDC	-	-
V 12	6AU6	-.1VDC	0V.	0V.	6.3VAC	140VDC	140VDC	.7VDC	-	-
V 13	6AL5	0V.	.1VDC	0V.	6.3VAC	.1VDC	0V.	-.1VDC	-	-
V 14	6SJ7	0V.	0V.	0V.	-.6VDC	0V.	12VDC	6.3VAC	26.5VDC	-
V 15	6Y6G	0V.	6.3VAC	147VDC	155VDC	0V.	0V.	0V.	15VDC	-
V 16	6BA6	-.8VDC	0V.	0V.	6.3VAC	240VDC	115VDC	0V.	-	-
V 17	6AU6	-.9VDC	0V.	6.3VAC	0V.	135VDC	135VDC	0V.	-	-
V 18	6SN7GT	-37VDC	70VDC	0V.	0V.	290VDC	4.7VDC	6.3VAC	0V.	-
V 19	6SN7GT	-15VDC	40VDC 70VDC	3.7VDC	0V.	93VDC	3.7VDC	6.3VAC	0V.	-
V 20	6K6GT	0V.	0V.	300VDC	300VDC	0V.	0V.	6.3VAC	30VDC 45VDC	-
V 21	6AL5	-1.3VDC	-1.3VDC	6.3VAC	0V.	3.5VDC	0V.	-5.3VDC	-	-
V 22	6J6	135VDC	135VDC	6.3VAC	0V.	-1.5VDC	-1.5VDC	.2VDC	-	-
V 23	6V6GT	0V.	0V.	195VDC	158VDC	-15VDC	.5VDC	6.3VAC	.5VDC	-
V 24	6BG6-G	0V.	6.3VAC	10.5VDC	300VDC	-1.9VDC	0V.	0V.	248VDC	†
V 25	1B3GT	†DO NOT MEASURE.								
V 26	5V4G	0V.	440VDC	0V.	380VDC	0V.	380VDC	440VDC	440VDC	-
V 27	5U4G	0V.	380VDC	0V.	360VAC	0V.	360VAC	0V.	380VDC	-
V 28	5Y3GT	0V.	212VDC	0V.	225VAC	0V.	225VAC	0V.	212VDC	-
V 29	10BP4	0V.	.5VDC	PIN #10 290VDC	PIN #11 20VDC	PIN #12 6.3VAC				

†DO NOT MEASURE.
§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
V 1B	6AG5	55KΩ	0Ω	.2Ω	0Ω	5KΩ**	5KΩ**	0Ω	-	-
V 2B	6J6	8KΩ**	3KΩ**	.2Ω	0Ω	230KΩ	10KΩ	0Ω	-	-
V 3	6J6	USED IN TUNER A1582.								
V 4	6AG5	40KΩ	39Ω	0Ω	.2Ω	4.5KΩ*	4.5KΩ*	39Ω	-	-
V 5A	6AU6	30KΩ	0Ω	0Ω	.2Ω	4.5KΩ*	4.5KΩ*	39Ω	-	-
V 6A	6AU6	30KΩ	0Ω	0Ω	.2Ω	12KΩ*	4.5KΩ*	39Ω	-	-
V 7	6AU6	.1Ω	0Ω	0Ω	.2Ω	10KΩ*	4.5KΩ*	150Ω	-	-
V 8	6AL5	.1Ω	50KΩ	0Ω	.2Ω	1 Meg.	0Ω	4KΩ	-	-
V 9	6AU6	500KΩ	0Ω	0Ω	.2Ω	11KΩ*	3.5KΩ*	0Ω	-	-
V 10	6K6GT	20KΩ	.2Ω	6.5KΩ*	3.5KΩ*	900KΩ	20KΩ	0Ω	330Ω	-
V 11	6AU6	0Ω	0Ω	0Ω	.2Ω	1.8KΩ**	1.8KΩ**	39Ω	-	-
V 12	6AU6	130KΩ	0Ω	0Ω	.2Ω	1.8KΩ**	1.8KΩ**	70Ω	-	-
V 13	6AL5	1 Meg.	1 Meg.	0Ω	.2Ω	27KΩ	0Ω	28KΩ	-	-
V 14	6SJ7	0Ω	0Ω	0Ω	1 Meg.	0Ω	2.2 Meg.**	.2Ω	500KΩ**	-
V 15	6Y6G	0Ω	.2Ω	890Ω**	750Ω**	470KΩ	INF.	0Ω	270Ω	-
V 16	6BA6	1.1 Meg.	0Ω	0Ω	.2Ω	10KΩ*	13KΩ*	0Ω	-	-
V 17	6AU6	950KΩ	0Ω	.2Ω	0Ω	9KΩ*	3.5KΩ*	0Ω	-	-
V 18	6SN7GT	250KΩ	680KΩ*	0Ω	470KΩ	5KΩ*	3.4KΩ	.2Ω	0Ω	-
V 19	6SN7GT	1.5 Meg.	2 Meg.* 1.4 Meg.*	2.5KΩ	60KΩ	200KΩ*	2.5KΩ	.2Ω	0Ω	-
V 20	6K6GT	INF.	0Ω	10KΩ*	10KΩ*	2.2 Meg.	INF.	.2Ω	7.7KΩ 3KΩ	-
V 21	6AL5	INF.	INF.	.2Ω	0Ω	600KΩ	0Ω	600KΩ	-	-
V 22	6J6	34KΩ*	34KΩ*	.2Ω	0Ω	INF.	INF.	33Ω	-	-
V 23	6V6GT	INF.	0Ω	5KΩ*	32KΩ*	39KΩ	60Ω	.2Ω	20Ω	-
V 24	6BG6-G	INF.	.2Ω	100Ω	28KΩ	470KΩ	7.5KΩ	0Ω	12KΩ*	5.5KΩ*
V 25	1B3GT	INF.	INF.	INF.	INF.	INF.	INF.	INF.	INF.	6KΩ*
V 26	5V4G	INF.	5.3KΩ*	INF.	75Ω*	INF.	75Ω*	75Ω	5.3KΩ*	-
V 27	5U4G	INF.	18KΩ	INF.	33Ω	INF.	30Ω	17.5KΩ	17.5KΩ	-
V 28	5Y3GT	INF.	60KΩ	INF.	65Ω	INF.	65Ω	INF.	60KΩ	-
V 29	10BP4	0Ω	1.2 Meg.	PIN #10 600Ω*	PIN #11 37KΩ*	PIN #12 .2Ω				

*MEASURED FROM PIN 8 OF V27.
**MEASURED FROM PIN 8 OF V28.

1 - DC Voltage measurements are at 20,000 ohms per volt: AC Voltage measured at 1000 ohms.

2 - Socket connections are shown as bottom views.

3 - Measured values are from socket pin to common negative unless otherwise stated.

4 - Line voltage maintained at 117 volts for voltage readings.

5 - Front panels controls set at maximum.

6 - Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.

ADMIRAL CHASSIS
30A1

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: ADMIRAL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amp.	6AC8	6AC8	7AF	Used in #94C8-2 Tuner
B	" "	6BM8	6BM8	9AV	Used in #94C9-2 Tuner
V2A	Mixer	6U8	6U8	7AT	Used in #A1582 Tuner
B	Converter	6C8	6U8	7AF	Used in #94C9-2 Tuner
V3	Mixer	6AG5	6AG5	7AD	Used in #A1582 Tuner
V4A	Oscillator	6J6	6J6	7AF	Used in #A1582 Tuner
B	"	6C4	6C4	6BG	Used in #94C9-2 Tuner
V4	1st Video IF	6AG5	6AG5	7AD	
V5A	2nd " "	6AU6	6AU6	7AK	Used in Chassis having "E" suffix
B	" " "	6AG5	6AG5	7AD	
V6A	3rd " "	6AU6	6AU6	7AK	Used in Chassis having "E" suffix
B	" " "	6AG5	6AG5	7AD	
V7	4th " "	6AU6	6AU6	7AK	
V8	Video Det. & 1st Restorer	6AL5	6AL5	6BT	
V9	Video Amp.	6AU6	6AU6	7AK	
V10	Video Output	6H6GT	6H6GT	7S	
V11	1st Sound IF	6AU6	6AU6	7AK	
V12	2nd " "	6AU6	6AU6	7AK	
V13	Ratio Detector	6AL5	6AL5	6BT	
V14	Ist Amp.	6BN7	6BN7	4AN	
V15	2nd Output	6Y6G	6Y6G	7AC	
V16	Sync. Amp.	6AU6	6AU6	7AK	
V17	Sync. Sep.	6AV6	6AV6	7AF	
V18	Sync. Pulse Inv. & Hor. Discr.	6SN7GT	6SN7GT	9AD	
V19	Vertical Osc.	6SN7GT	6SN7GT	9AD	
V20	Vertical Output	6V6GT	6V6GT	7AC	
V21	Hor. Sync. Disc.	6AL5	6AL5	6BT	
V22	Hor. Osc. Cont.	6J6	6J6	7AF	
V23	Hor. Osc.	6V6GT	6V6GT	7AC	
V24	Hor. Output	6BG6-G	6BG6-G	1C	
V25	1kV Rectifier	1B3GT	1B3GT	3C	
V26	Damper	5V4G	5V4G	5L	
V27	B+ Rectifier	5U4G	5U4G	5T	
V28	" "	5Y3GT	5Y3GT	5T	
V29	Picture Tube	19BP4	19BP4		

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ADMIRAL PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	67C15-1	AF88J	UP8QJ178	DY-TV-2x40-450	TVL-64	Filter
B	40	450				DY-TV-6D+40	TVL-60	▬ Filter
C2A	80	300	67C15-2			+20/300+50/25		■ "
B	40	450						▲ "
C3A	25	25						Output Cathode Bypass
B	50	450	67C15-4	AF444J§§	UP8QJ180	DY-TV-20+20/450+60/350	TVL-65	Decoupling
C	40	450						Vert. Out. Plate Decoup.
D	40	450						Decoupling
C4A	40	450	67C15-3	AF44J	UP6QJ123	DY-TV-20+10/450+50/50		Low Pass Filter
B	50	450		FRS50-50				Decoupling
C	50	50						Vert. Out. Cath. Byp.
C5	4	50	67A4-4	PRS150/4	BR415	M-TV-4-50	TVA-13	Stabilizing Cap.
C6	50	25	67A4-7	FRS25-50	BR502	M-TV-50-25	TVA-7	Bias Filter
C7	50	25	67A4-7	FRS25-50	BR502	M-TV-50-25	TVA-7	" -Note 1
C8	5		98A45-22					Fixed Trimmer-Note 2-Cer.
C9	1000		98A45-24					RF Fil. Bypass " "
C10	120		98A45-25					RF Decoupling " "
C11	100		98A45-26					RF Coupling " "
C12	1000		98A45-24					Conv. Fil. Byp. " "
C13	25		98A45-28					Osc. Feedback " "
C14	20		98A45-27					Osc. Grid Cap. " "
C15	1000		98A45-24					RF Bypass " "
C16	1000		98A42-2		1467-0016	1W5D15	MW.5-215	1FM-215 Bias Filter " "
C17	1000		98A42-2		1467-0016	1W5D15	MW.5-215	1FM-215 1st V. Screen Byp. " "
C18	500		98A41-1		1468-0003	5W573	M0.5-33	1FM-33 Video IF Coupling " "
C19	1500		98A42-2		1467-0016	1W5D15	MW.5-215	1FM-215 2nd V. Screen Byp. " "
C20	1500		98A42-2		1467-0016	1W5D15	MW.5-215	1FM-215 Bias Filter " "
C21	1500		98A42-2		1467-0016	1W5D15	MW.5-215	1FM-215 " " " "
C22	1500		98A42-2		1467-0016	1W5D15	MW.5-215	1FM-215 3rd V. Fil. Bypass " "
C23	1500		98A42-2		1467-0016	1W5D15	MW.5-215	1FM-215 3rd V. Screen Byp. " "
C24	1500		98A42-2		1467-0016	1W5D15	MW.5-215	1FM-215 4th V. Cath. Byp. " "
C25	1500		98A42-2		1467-0016	1W5D15	MW.5-215	1FM-215 4th V. Screen Byp. " "
C26	10		65B6-33		1468-00001	5W5Q1	M0.5-41	1FM-41 Diode Filter " "
C27	1500		98A42-2		1467-0015	1W5D15	MW.5-215	1FM-215 V. Det. Fil. Byp. " "
C28	.05	400	84B6-22		P488-05	GT4S5	ST-4-05	TM-15 Video Coupling " "
C29	.1	200	84B5-30		P288-1	GT2P1	ST-2-1	TM-1 Bias Filter " "
C30	.05	600	84B5-7		P688-05	GT6S5	ST-6-05	TM-15 Video Coupling " "
C31	.05	400	84B6-22		P488-05	GT4S5	ST-4-05	TM-15 " " " "
C32	.05	400	84B6-22		P488-05	GT4S5	ST-4-05	TM-15 " " " "
C33	1500		98A42-2		1467-0015	1W5D15	MW.5-215	1FM-215 1st S. Cath. Byp. " "
C34	1500		98A42-2		1467-0015	1W5D15	MW.5-215	1FM-215 1st S. Fil. Byp. " "
C35	1500		98A42-2		1467-0015	1W5D15	MW.5-215	1FM-215 1st S. Screen Byp. " "
C36	1500		98A42-2		1467-0016	1W5D15	MW.5-215	1FM-215 2nd S. Cath. Byp. " "
C37	1500		98A42-2		1467-0016	1W5D15	MW.5-215	1FM-215 2nd S. Fil. Byp. " "
C38	1500		98A42-2		1467-0016	1W5D15	MW.5-215	1FM-215 2nd S. Screen Byp. " "
C39	350	500	98B5-24		1468-00035	5W574	M0.5-34	1FM-335 RF Bypass
C40	300	500	98B4-23		1468-0003	5W573	M0.5-33	1FM-33 Diode Load Cap.‡‡
C41	300	500	98B4-23		1468-0003	5W573	M0.5-33	1FM-33 " " " ‡‡
C42	.002	600	84B6-14		P688-002	GT6D2	ST-6-002	TM-22 De-emphasis
C43	.005	600	84B5-12		P688-005	GT6D5	ST-6-005	TM-25 Audio Coupling
C44	.1	400	84B5-20		P488-1	GT4P1	ST-4-1	TM-1 AF Screen Bypass
C45	.1	400	84B6-20		P488-1	GT4P1	ST-4-1	TM-1 AF Decoupling
C46	.005	600	84B5-12		P688-005	GT6S5	ST-6-005	TM-25 Audio Coupling
C47	.01	600	84B5-10		P1088-01	GT6S1	STM-10-01	TM-11 Output Plate Bypass
C48	.05	400	84B6-22		P488-05	GT4S5	ST-4-05	TM-15 Sync. Coupling
C49	200	500	98B6-21		1468-0002	5W572	M.5-32	1FM-32 Sync. Amp. Plate Byp.
C50	.1	400	84B5-20		P488-1	GT4P1	ST-4-1	TM-1 Sync. Amp. Plate Decoup.
C51	350	500	98B5-24		1468-00035	5W574	M.5-34	1FM-335 Sync. Coupling
C52	.05	400	84B6-22		P488-05	GT4S5	ST-4-05	TM-15 " "
C53	.01	600	64B5-10		P688-01	GT6S1	ST-6-01	TM-11 " "
C54	.002	600	64B5-14		P688-002	GT6D2	ST-6-002	TM-22 Integrator
C55	.005	600	64B5-12		P688-005	GT6D5	ST-6-005	TM-25 "
C56	.005	600	64B5-12		P688-005	GT6D5	ST-6-005	TM-25 "
C57	.05	400	64B5-22		P488-05	GT4S5	ST-4-05	TM-15 Vert. Osc. Cath. Byp.
C58	.005	600	64B5-12		P688-005	GT6D5	ST-6-005	TM-25 Vert. Osc. Coupling
C59	.05	400	64B5-22		P488-05	GT4S5	ST-4-05	TM-15 Vert. Discharge
C60	.1	400	64B5-20		P488-1	GT4P1	ST-4-1	TM-1 Vert. Coupling
C61	100	500	65B5-17		1468-0001	5W5T1	M0.5-31	1FM-31 Hor. Sync. Coupling
C62	100	500	65B5-17		1468-0001	5W5T1	M0.5-31	1FM-31 " " "
C63	.001	600	64B5-15		P688-001	GT6D1	ST-6-001	TM-21 AFC Coupling
C64	.01	600	64B5-10		P688-01	GT6S1	ST-6-01	TM-11 AFC Filter
C65	.05	400	64B5-22		P488-05	GT4S5	ST-4-05	TM-15 " "
C66	.02	600	64B5-9		P688-02	GT6S2	ST-6-02	TM-12 Hor. Osc. Cont. Coup.
C67	.015	600	65A13-1		P688-015	GT6S15		Phase Shift
C68	.005	600	64B5-12		P688-005	GT6D5	ST-6-005	TM-25 Hor. Osc. Grid Cap.
C69	.05	600	64B6-7		P688-05	GT6S5	ST-6-05	TM-15 Hor. Osc. Screen Byp.
C70	350	500	65B5-24		1468-00035			1FM-335 Differentiator
C71	.01	600	64B5-10		P688-01	GT6S1	ST-6-01	TM-11 Hor. Coupling
C72	.001	600	64B5-15		P688-001	GT6D1	ST-6-001	TM-21 " "
C73	680	500	65B1-53					Hor. Discharge
C74	.1	400	64B5-21		P488-1	GT4P1	ST-4-1	TM-1 Hor. Output Cath. Byp.
C75	.05	600	64B5-7		P688-05	GT6S5	ST-6-05	TM-15 Hor. Output Screen Byp.
C76	500	10000	65A11-1					H. V. Filter Tn. Oxide
C77	.5	200	64B6-27		P288-5	GT2P5	ST-2-5	TC-5 Hor. Sweep Coupling
C78	.035	600	64A2-5					Damping Filter
C79	.05	600	64A2-4		P688-05	GT6S5	ST-6-05	TM-15 " "
C80	.5	200	64B5-27		P288-5	GT2P5	ST-2-5	TC-5 Picture Tube Cath. Byp.
C81	270		98A44-10					RF Coupling-Note 3-Cer.
C82	270		98A44-10					" " " "
C83	10		65B6-33					Fixed Trimmer-Note 3 "
C84	10		65B6-33					" " " "
C85	1500		98A44-12					Bias Filter " "
C86	1.5		98A44-6					Neutralizing " "
C87	1.5		98A44-6					" " "
C88	1500		98A44-12					RF Decoupling " "
C89	2.2		98A44-7					RF Coupling " "
C90	4.7		98A44-8					" " " "
C91	.68		98A44-5					" " " "
C92	22		98A44-9					Fixed Trimmer " "
C93	1500		98A44-12					Osc. Decoupling " "
C94	10		65B6-33					Fixed Trimmer " "
C95	4.7		98A44-8					Osc. Feedback " "
C96	4.7		98A44-8					" " " "
C97	1500		98A44-12					Mixer Decoupling " "
C98	270		98A44-11					IF Coupling " "
C99	1500		98A44-12					Fil. Bypass " "
C100	68		98A44-4					Fixed Trimmer " "
C101	1500		65A12-2		1467-0015	1W5D15	MW.5-215	1FM-215 Bias Filter "±
C102	.05		64B5-22		P488-05	GT4S5	ST-4-05	TM-15 1st S. IF Decoup. "±
C103	1500		65A12-2		1467-0015	1W5D15	MW.5-215	1FM-215 Fil. Bypass "±
C104	.1	400	64B5-21		P488-1	GT4P1	ST-4-1	TM-1 RF Bypass
C105	680		98A46-10					Ant. Coupling-Note 4 "
C106	680		98A46-10					" " " "
C107	680		98A46-10					RF Coupling " "
C108	680		98A46-10					RF Screen Byp. " "
C109	500		98A46-11					RF Cathode Byp. " "
C110	680		98A46-10					Bias Filter " "
C111	680		98A46-10					Decoupling " "
C112	680		98A46-10					RF Plate Decoup. " "
C113	.68		98A46-12					RF Coupling " "
C114	.47		98A46-13					" " " "
C115	1.5		98A46-14					" " " "
C116	25		98A46-15					" " " "
C117	1.5		98A46-14					Osc. Coupling " "
C118	5000		98A46-16					Mixer Screen Byp. " "
C119	1500		98A46-17					Mixer Plate Decoup. " "
C120	270	500	98A44-11					IF Coupling " "
C121	680		98A46-10					Osc. Feedback-Note 4 "
C122	3		98A46-19					" " " "
C123	680		98A46-10					Osc. Plate Decoup. " "
C124	680		98A46-10					Osc. Fil. Byp. " "
C125	5000		98A46-6		1467-005	1D5D5	MW.5-25	1FM-25 AVC Filter-Note 5 "

§§Parallel sections to obtain desired capacity.
‡‡When either Item C40 or C41 are replaced, replace both with capacitors of equal value.
‡Used only in early production models.
Note 1-Early production models, using an RC Filter in the Selenium Rectifier Bias Circuit, used 4 MFD in this application.
Note 2-Items C9 to C15 used with Tuner 94C8-2.
Note 3-Items C81 to C100 used with Tuner A1582.
Note 4-Items C105 to C124 used with Tuner 94C9-2.
Note 5-Not used in all models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ADMIRAL PART No.	CLAROSTAT PART No.	IRC PART No.		NOTES
R1A	1 Meg.	½	75B11-1				Vertical Hold Control — Dual
B	100KΩ	½					Horizontal Hold Control
R2A	100KΩ	½	75B11-2				Brightness Control — Dual
B	25KΩ	½					Contrast Control
R3A	1 Meg.	½	75B12-1				Volume Control & Switch — Dual
B	30000Ω	½					Focus Control
R4A	50000Ω	½	75A13-1	M-19-S	D11-114		Vertical Linearity Control
B	Shaft		Not Req.	Not Req.	A		Attach to R4A per instructions
R5A	2 Meg.	½	75A13-3	M-83-S			Height Control
B	Shaft		Not Req.	Not Req.			Attach to R5A per instructions
R6A	25KΩ	½	75A13-2	M-40-S	D11-120		Horizontal Drive Control
B	Shaft		Not Req.	Not Req.	A		Attach to R6A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ADMIRAL PART No.	IRC PART No.	IDENTIFICATION CODES (ALL RESISTORS TOL. ARE 10% UNLESS OTHERWISE SPECIFIED)		
R7	3900Ω	½	98A45-16	BTS-3900	Or.-White-Red	RF Grid	±20%
R8	47KΩ	½	98A45-17	BTS-47K	Yl.-Vi.-Or.	" "	±20%
R9	10KΩ	½	98A45-18	BTS-10K	Br.-Blk.-Or.	RF Coil Shunt	±20%
R10	2200Ω	½	98A45-19	BTS-2200	Red-Red-Red	Decoupling	±20%
R11	10KΩ	½	98A45-18	BTS-10K	Br.-Blk.-Or.	Osc. Grid	±20%
R12	4700Ω	½	98A45-20	BTS-4700	Yl.-Vi.-Red	Osc. Plate Load	±20%
R13	4700Ω	½	98A45-20	BTS-4700	Yl.-Vi.-Red	Mixer Grid	
R14	220KΩ	½	98A45-21	BTS-220K	Red-Red-Yl.	" "	±20%
R15	180Ω	‡	60B8-181		Br.-Gray-Br.	Decoupling-See Note 1	
R16	15KΩ	‡	60B7-153		Br.-Grn.-Or.	1st Video IF Grid	±5%
R17	39Ω	‡	60B8-390		Or.-White-Blk.	1st Video IF Cathode	
R18	12KΩ	‡	60B8-123	BTS-12K	Br.-Red-Or.	Bias Filter	
R19	15KΩ	‡	60B8-153	BTS-15K	Br.-Grn.-Or.	Bias Network-See Note 2	
R20	47KΩ	‡	60B8-473	BTS-47K	Yl.-Vi.-Or.	" "	
R21	3900Ω	‡	60B8-392	BTS-3900	Or.-White-Red	" "	
R22	1000Ω	‡	60B8-102	BTS-1000	Br.-Blk.-Red	1st Video IF Decoupling	
R23	2.4KΩ	‡	60B7-242		Red-Yl.-Red	2nd Video IF Grid	±5%
R24	39Ω	‡	60B8-8-390		Or.-Wh.-Blk.	2nd Video IF Cathode	
R25	1000Ω	‡	60B8-102	BTS-1000	Br.-Blk.-Red	2nd Video IF Decoupling	
R26	12KΩ	‡	60B8-123		Br.-Red-Or.	Bias Filter	
R27	39Ω	‡	60B8-390		Or.-White-Blk.	3rd Video IF Cathode	
R28	1000Ω	‡	60B8-102	BTS-1000	Br.-Blk.-Red	3rd Video IF Decoupling	
R29	150Ω	‡	60B8-151		Br.-Grn.-Br.	4th Video IF Cathode	
R30	1000Ω	‡	60B8-102	BTS-1000	Br.-Blk.-Red	4th Video IF Decoupling	
R31	3900Ω	‡	60B8-392	BTS-3900	Or.-White-Red	Video Det. Load	
R32	470KΩ	‡	60B8-474	BTS-470K	Yl.-Vi.-Yl.	Video Amp. Grid	
R33	39KΩ	‡	60B8-393	BTS-39K	Or.-White-Or.	Bias Network	
R34	100KΩ	‡	60B8-104	BTS-100K	Br.-Blk.-Yl.	Bias Filter	
R35	3300Ω	1	60B14-332	BTA-3300	Or.-Or.-Red	Video Amp. Plate Load	
R36	6800Ω	2	60B20-682	BT-2-6800	Blue-Gray-Red	Low Pass Network	
R37	30000Ω	15	61A1-9	DG-3000		Bleeder	
R38	15KΩ	2	60B20-153	BT-2-15K	Br.-Grn.-Or.	"	
R39	820KΩ	‡	60B8-824	BTS-820K	Gray-Red-Yl.	Video Output Grid	
R40	33Ω	‡	60B8-331		Or.-Or.-Br.	Video Output Cathode	
R41	3300Ω	1	60B14-332	BTA-3300	Or.-Or.-Red	Video Output Plate	
R42	10KΩ	‡	60B8-103	BTS-10K	Br.-Blk.-Or.	Phase Correction	
R43	100KΩ	‡	60B8-104	BTS-100K	Br.-Blk.-Yl.	Picture Tube Grid	
R44	1 Meg.	‡	60B8-105	BTS-1 Meg.	Br.-Blk.-Grn.	DC Restorer Load	
R45	47KΩ	‡	60B8-473	BTS-47K	Yl.-Vi.-Or.	" " "	
R46	220KΩ	‡	60B8-224	BTS-220K	Red-Red-Yl.	Cathode Bias Bleeder	
R47	22KΩ	‡	60B8-223	BTS-22K	Red-Red-Or.	Cathode Bias Bleeder	
R48	39Ω	‡	60B8-390	BW-½-39	Or.-White-Blk.	1st Audio IF Cathode	
R49	1000Ω	‡	60B8-102	BTS-1000	Br.-Blk.-Red	1st Audio IF Decoupling	
R50	68Ω	‡	60B8-680	BW-½-68	Blue-Gray-Blk.	2nd Audio IF Cathode	
R51	1000Ω	‡	60B8-102	BTS-1000	Br.-Blk.-Red	2nd Audio IF Decoupling	
R52	47Ω	‡	60B8-470		Yl.-Vi.-Blk.	Balancing	
R53	4.7Ω	‡	60B28-11		Yl.-Vi.-Gold	Filament String	
R54	27KΩ	‡	60B8-273	BTS-27K	Red-Vi.-Or.	Ratio Detector Load	
R55	27KΩ	‡	60B8-273	BTS-27K	Red-Vi.-Or.	" "	
R56	1000Ω	‡	60B8-102	BTS-1000	Br.-Blk.-Red	Balancing	
R57	27KΩ	‡	60B8-273	BTS-27K	Red-Vi.-Or.	De-emphasis	
R58	1 Meg.	‡	60B8-105	BTS-1 Meg.	Br.-Blk.-Grn.	AF Grid	
R59	2.2 Meg.	‡	60B8-225	BTS-2.2 Meg.	Red-Red-Grn.	AF Screen	
R60	470KΩ	‡	60B8-474	BTS-470K	Yl.-Vi.-Yl.	AF Plate Load	
R61	47KΩ	‡	60B8-473	BTS-47K	Yl.-Vi.-Or.	AF Plate Decoupling	
R62	470KΩ	‡	60B8-474	BTS-470K	Yl.-Vi.-Yl.	Output Grid	
R63	270Ω	1	60B14-271	BW-1-270	Red-Vi.-Br.	Output Cathode	
R64	3300Ω	2	60B20-332	BT-2-3300	Or.-Or.-Red	Filter	
R65	39Ω	‡	60B8-390	BW-½-39	Or.-White-Blk.	Isolation-See Note	
R66	2.2 Meg.	‡	60B8-225	BTS-2.2 Meg.	Red-Red-Grn.	Sync. Amp. Grid	
R67	2.2 Meg.	‡	60B8-225	BTS-2.2 Meg.	Red-Red-Grn.	Bias Network	
R68	10KΩ	‡	60B8-103	BTS-10K	Br.-Blk.-Or.	Sync. Amp. Screen	
R69	4700Ω	1	60B14-472	BTA-4700	Yl.-Vi.-Red	Sync. Amp. Plate Load	
R70	4700Ω	1	60B14-472	BTA-4700	Yl.-Vi.-Red	Sync. Amp. Decoupling	
R71	2.2 Meg.	‡	60B8-225	BTS-2.2 Meg.	Red-Red-Grn.	Bias Network	
R72	1.8 Meg.	‡	60B8-185	BTS-1.8 Meg.	Br.-Gray-Grn.	Sync. Sep. Grid	
R73	5600Ω	‡	60B8-562	BTS-5600	Grn.-Blue-Red	Sync. Sep. Plate Load	
R74	470KΩ	‡	60B8-474	BTS-470K	Yl.-Vi.-Yl.	Sync. Pulse Inv. Grid	
R75	3300Ω	‡	60B8-332	BTS-3300	Or.-Or.-Red	Sync. Pulse Inv. Cathode	
R76	270Ω	‡	60B8-271		Red-Vi.-Br.	" " " "	
R77	3300Ω	‡	60B8-332	BTS-3300	Or.-Or.-Red	Sync. Pulse Inv. Plate Load	
R78	470KΩ	‡	60B8-474	BTS-470K	Yl.-Vi.-Yl.	Sync. Discriminator Load	
R79	470KΩ	‡	60B8-474	BTS-470K	Yl.-Vi.-Yl.	Sync. Discriminator Load	
R80	150KΩ	1	60B28-14	BTA-150K	Br.-Grn.-Yl.	Pulse Injection Load	
R81	82KΩ	1	60B28-15	BTA-82K	Gray-Red-Or.	Feedback Network	
R82	470KΩ	‡	60B8-474	BTS-470K	Yl.-Vi.-Yl.	Horizontal AFC Filter	
R83	1000Ω	‡	60B8-102	BTS-1000	Br.-Blk.-Red	" " "	
R84	33Ω	‡	60B8-330		Or.-Or.-Blk.	Horizontal Osc. Control Cathode	
R85	33KΩ	2	60B20-333	BT-2-33K	Or.-Or.-Or.	Horizontal Osc. Control Plate	
R86	39KΩ	‡	60B8-393	BTS-39K	Or.-White-Or.	Horizontal Osc. Grid	
R87	33KΩ	1	60B14-333	BTA-33K	Or.-Or.-Or.	Horizontal Osc. Screen	
R88	5000Ω	5	61A1-8	AB-5000		Horizontal Osc. Plate Load	
R89	270KΩ	‡	60B8-274	BTS-270K	Red-Vi.-Yl.	Horizontal Discharge Grid	
R90	8200Ω	‡	60B8-822	BTS-8200	Gray-Red-Red	Differentiator	
R91	680KΩ	‡	60B7-684	BTS-680K	Blue-Gray-Yl.	Horizontal Discharge Plate	±5%
R92	8200Ω	‡	60B8-822	BTS-8200	Gray-Red-Red	Horizontal Peaking	±5%
R93	470KΩ	‡	60B8-474	BTS-470K	Yl.-Vi.-Yl.	Horizontal Output Grid	
R94	100Ω	2	60B20-101		Br.-Blk.-Br.	Horizontal Output Cathode	
R95	12KΩ	2	60B20-123	BT-2-12K	Br.-Red-Or.	Horizontal Output Screen	
R96	3.3Ω	‡	60B28-10		Or.-Or.-Gold	Fil. Dropping	
R97	1 Meg.	1	60B28-33		Br.-Blk.-Grn.	H. V. Filter	
R98A	500Ω					Horizontal Damping	
B	500Ω	50	61A8			" "	
C	5300Ω					" "	
R99	1200Ω	5	61A1-10	AB-1200		Focus Coil Shunt	
R100	3900Ω	2	61B20-392	BT-2-3900	Or.-White-Red	" " "	
R101	18Ω	1	60B14-180	BW-1-18	Br.-Gray-Blk.	Isolation	
R102	22KΩ	‡	60B8-223	BTS-22K	Red-Red-Or.	Vertical Osc. Grid	
R103	22KΩ	‡	60B8-223	BTS-22K	Red-Red-Or.	Integrator	
R104	8200Ω	‡	60B8-822	BTS-8200	Gray-Red-Red	"	
R105	8200Ω	‡	60B8-822	BTS-8200	Gray-Red-Red	"	
R106	2200Ω	‡	60B8-222	BTS-2200	Red-Red-Red	Vert. Osc. Cathode	
R107	150KΩ	‡	60B8-154	BTS-150K	Br.-Grn.-Yl.	Vert. Osc. Plate Load	
R108	5600Ω	‡	60B8-562	BTS-5600	Grn.-Blue-Red	Vert. Osc. Decoupling	
R109	1.2 Meg.	‡	60B8-125	BTS-1.2 Meg.	Br.-Red-Grn.	Vert. Osc. Plate	
R110	470KΩ	‡	60B8-474	BTS-470K	Yl.-Vi.-Yl.	Vert. Osc. Grid	
R111	470KΩ	‡	60B8-474	BTS-470K	Yl.-Vi.-Yl.	Bleeder	
R112	8200Ω	‡	60B8-822	BTS-8200	Gray-Red-Red	Vert. Peaking	
R113	2700Ω	1	60B14-272	BTA-2700	Red-Vi.-Red	Vertical Output Cathode	
R114	2.2 Meg.	‡	60B8-225	BTS-2.2 Meg.	Red-Red-Grn.	Vertical Output Grid	
R115	10KΩ	1	60B14-103	BTA-10K	Br.-Blk.-Or.	Vertical Output Decoupling	
R116	270KΩ	‡	60B8-274	BTS-270K	Red-Vi.-Yl.	Bleeder-See Note 1	
R117	270KΩ	1	60B14-274	BTA-270K	Red-Vi.-Yl.	" " " "	
R118	150Ω	‡	60B8-151		Br.-Grn.-Br.	RF Grid	
R119	150Ω	‡	60B8-151		Br.-Grn.-Br.	" "	
R120	1000Ω	‡	60B8-102	BTS-1000	Br.-Blk.-Red	Bias Filter	
R121	4700Ω	‡	60B8-472		Yl.-Vi.-Red	RF Plate	
R122	4700Ω	‡	60B8-472		Yl.-Vi.-Red	" "	
R123	1000Ω	‡	60B8-102	BTS-1000	Br.-Blk.-Red	RF Decoupling	
R124	1000Ω	‡	60B8-102	BTS-1000	Br.-Blk.-Red	Mixer Decoupling	
R125	10KΩ	‡	60B8-103	BTS-10K	Br.-Blk.-Or.	Mixer Grid Shunt	
R126	1 Meg.	‡	60B8-105	BTS-1 Meg.	Br.-Blk.-Grn.	Mixer Grid	

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (CONT.)

R127	150Ω	½	60B8-151		Br.-Grn.-Br.	Decoupling	
R128	4700Ω	½	60B8-472		Yl.-Vi.-Red	Osc. Plate	
R129	47Ω	½	60B8-470		Yl.-Vi.-Blk.	Osc. Cathode	
R130	100KΩ	½	60B8-103		Br.-Blk.-Yl.	Osc. Grid	
R131	100KΩ	½	60B8-103		Br.-Blk.-Yl.	" "	
R132	1 Meg.	½	60B9-105		Br.-Blk.-Grn.	RF Grid	
R133	150Ω	½	60B9-151		Br.-Grn.-Br.	RF Cathode	
R134	10KΩ	½	60B9-103	BTS-10K	Br.-Blk.-Or.	RF Screen	
R135	1000Ω	½				RF Coil Shunt (Part of L34)	
R136	150Ω	½	60B9-151		Br.-Grn.-Br.	RF Decoupling	
R137	56KΩ	½	60B9-563		Grn.-Blue-Or.	Mixer Grid	
R138	1 Meg.	½	60B9-105		Br.-Blk.-Grn.	" "	
R139	47KΩ	½	60B9-473	BTS-47K	Yl.-Vi.-Or.	Mixer Screen	
R140	1000Ω	½	60B9-102	BTS-1000	Br.-Blk.-Red	Mixer Plate Decoupling	
R141	4700Ω	½	60B9-472		Yl.-Vi.-Red	Mixer Grid Shunt	
R142	6800Ω	1	60B15-682		Blue-Gray-Red	Oscillator Plate Load	
R143	22KΩ	½	60B9-223		Red-Red-Or.	Oscillator Grid	
R144	470Ω	½	60B9-471		Yl.-Vi.-Br.	Oscillator Cathode	
R145	180KΩ	½	60B8-184	BTS-180K	Br.-Gray-Yl.	AVC Network-See Note 1	±20%
R146	470KΩ	½	60B8-474	BTS-470K	Yl.-Vi.-Yl.	" " " "	
R147	12KΩ	½	60B8-123		Br.-Red-Or.	Bias Filter-See Note 1	

Note 1-Not used in all models.
Note 2-Some models use 27KΩ resistor in this application.
Items R7 through R14 are used in Tuner 94C8-2.
Items R118 through R131 are used in Tuner A5182.
Items R132 through R134 are used in Tuner 94C9-2.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	ADMIRAL PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
T1A	117V AC @ 1.6A	740V AC CT @ .240A DC	5V AC @ 3A.	5V AC @ 2A.	80B11*	P-8154		P-3059
			SEC. 4					
			6.5V AC @ 4.5A					
T1B					80B7#			
T2A	117V AC @ .62A	450V AC CT @ .78A DC	5V AC @ 2A	6.5V AC @ 3.9A	80B12*	P-8155	T22R04‡	
B					80B8#			

*Half-shell mounting. #Upright mounting (Alternate Power Transformer).
‡Add series resistor to reduce plate voltage.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	DC RESISTANCE		ADMIRAL PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.	
	PRI.	SEC.					
T3	5.5Ω tap @ 1.5Ω		72B43				Hor. Osc. Trans.
T4	10.6Ω tapped @ .6Ω	410Ω tapped @ 170Ω	79B7	A-8117			Hor. Output Trans.
T5	6.9Ω	590Ω	79B6	A-8115		A-3035	Vertical Output Trans.
T6A	14Ω		94B2-2				Hor. Deflec. Yoke
B	6.8Ω						Vert. Deflec. Yoke
T7	1600Ω		69B35-1	FC-10**			Focus Coil

**Fabricate new mounting plate.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ADMIRAL PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T8	2KΩ	2.9Ω	130Ω	.4Ω	79A8	A-3876	T22S45	A-2928	

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	ADMIRAL PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.	
L1	.240A	55Ω	2.0 Henries	74A12	C-2325	T20C56*†	C-2991	†*Drill new mtg. hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	ADMIRAL PART No.	MEISSNER PART No.	
L2	Ant. Trans. & RF Grid	0Ω	0Ω	98A45†		Used in Tuner #94C8-2.
L3	RF Plate, Mixer Grid & Osc. Coils	0Ω	0Ω	98A45†		†L2 and L3 are supplied only in matched pairs. Add Channel number as suffix to Part # for Channels 2-12. Channel 13 is #98A45-43.
L4	Fil. Choke	0Ω		98A45-13		Used in Tuner 94C8-2.
L5	" "	0Ω		98A45-14		" " " 94C8-2.
L6	1st IF Trans	0Ω	.2Ω	98A45-1		" " " 94C8-2.
L7	RF Coil	.2Ω		98A45-15		" " " 94C8-2.
L8	1st Video IF	.1Ω		69A32		
L9	Fil. Choke	0Ω		73A2		
L10A	2nd Video IF	.2Ω		72A81		Used in Chassis with "E" suffix
B	" " "	.2Ω		72B40		Used in Chassis without "E" suffix
L11	3rd " "	.1Ω		72A82		Used in Chassis with "E" suffix
L12	" " "	.1Ω		72B41		Used in Chassis without "E" suffix
L13	4th " "	.2Ω		72B42		
L14	Peaking Coil	5Ω		AA139-1		180 Microhenry, wound on 39KΩ resistor
L15	" "	6Ω		AA139-2		250 Microhenry
L16	" "	4Ω		AA139-3		120 Microhenry, wound on 22KΩ resistor
L17	" "	4Ω		AA139-4		93 Microhenry
L18	" "	4Ω		AA139-3		120 Microhenry, wound on 22KΩ resistor
L19	" "	4Ω		AA139-4		93 Microhenry
L20	Fil. Choke	0Ω		73A2		
L21	2nd Sound IF	.4Ω	.2Ω	72B58		For replacement, order Part #72B44.
L22	Fil. Choke	0Ω		73A2		
L23	Sound Det. Trans.	.2Ω	.1Ω	72B45		
L24	Width Cont.	.6Ω		94A4		

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (CONT.)

L25	Hor. Linearity Control	35Ω		94A3		
L26	Interference Trap	0Ω		98A44-28††		Used in Tuner #A1582. May be added to units not originally equipped with trap. ††Includes C83 & C84
L27	"	0Ω				
L28	Ant. Input Coil	.2Ω CT		98A44-3		Includes C83 & C84
L29	IF Trap					" " " "
L30	1st IF Trans.			98A44-27		" " " "
L31	Fil. Choke	0Ω				" " " "
L32	Ant. Coil	0Ω				Used in Tuner 94C9-2 (9 Turns #22 wire)
L33	" "	0Ω				" " " "
L34	Ant. Input Coil	.2Ω CT		98A46-23		" " " "
L35	1st IF Trans.	.2Ω CT	.2Ω	72B61		" " " "
L36	Fil. Choke	0Ω		98A46-24		
L37	" "	0Ω		73A2		Used in Early Production only.

SPEAKER

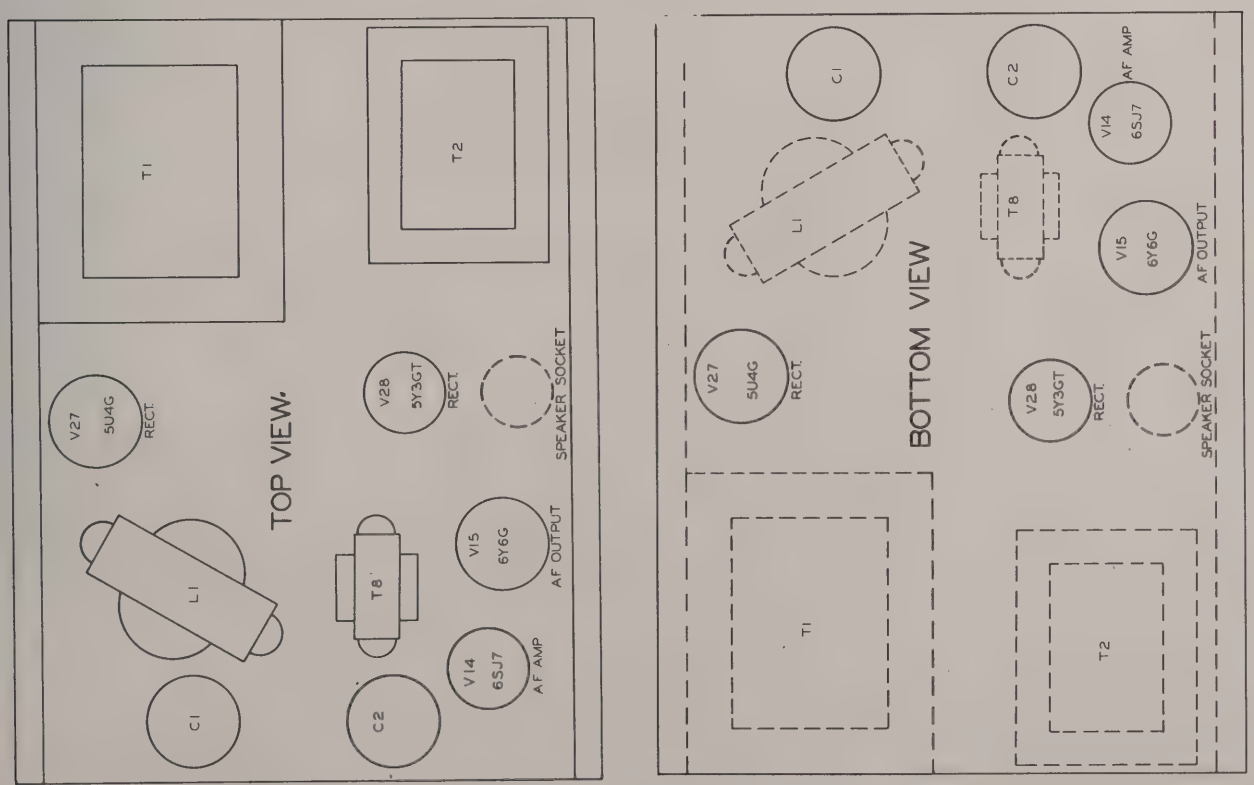
ITEM No.	RATING		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	ADMIRAL PART No.	JENSEN PART No.	QUAM PART No.	
SP1	750Ω	2.9Ω	78B-36-1		SPECIAL§	§Order thru jobber specifying field resistance and use.
	CONE DIA.	V. C. DIA.				
SP2	6"	3/4"				

SELENIUM RECTIFIER

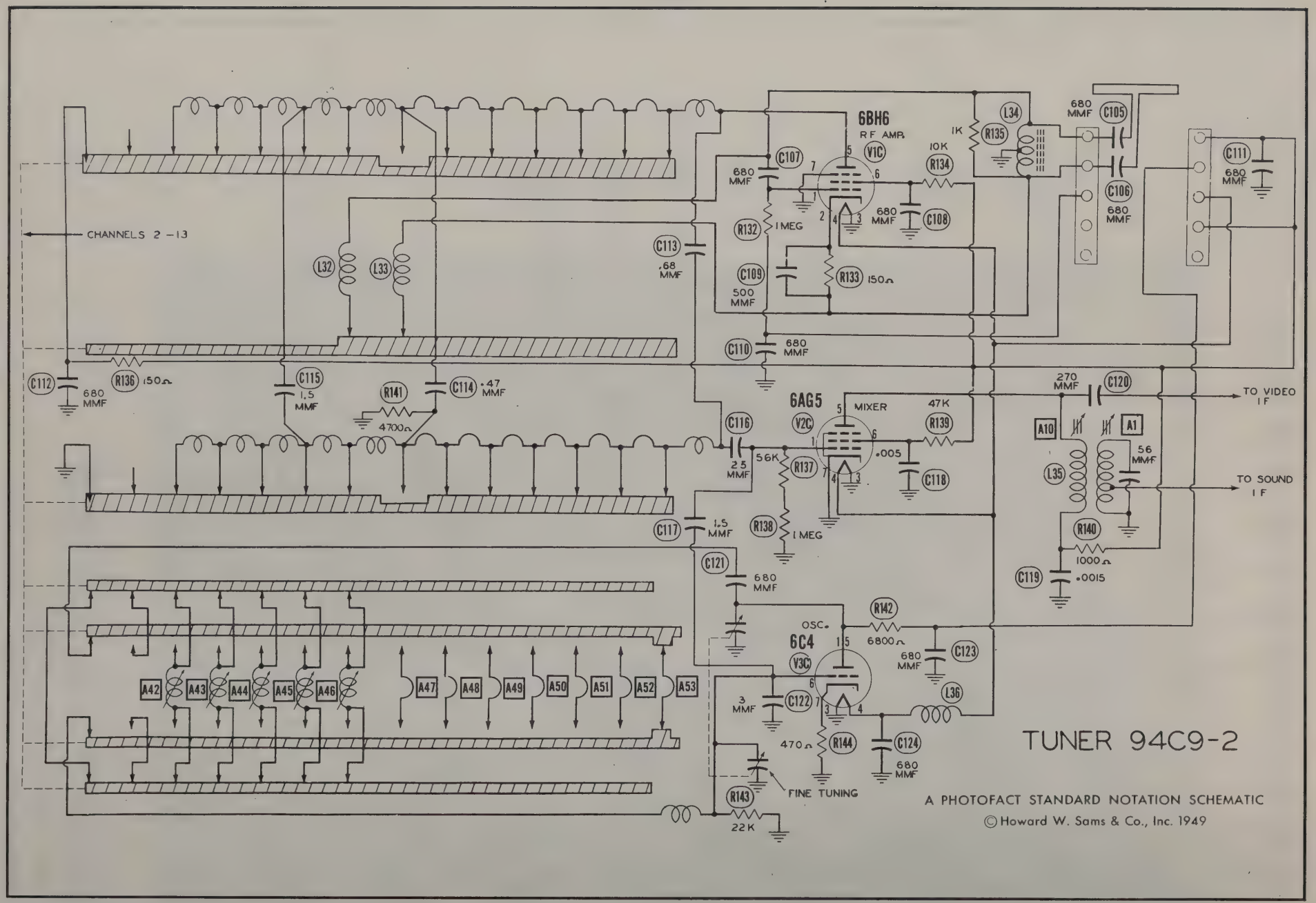
ITEM No.	RATING	REPLACEMENT DATA			NOTES
	CURRENT	ADMIRAL PART No.			
M1	0.32 MA	93A2			

MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M2A	Tuner Assembly	94C8-2	
B	" "	A1582	
C	" "	94C9-2	
M3	Fuse	84A4-2	1/4 Amp.
M4	Ion Trap PM	94B6	
	Plug	88A20-1	14 Pin, Retangular
	Socket	88A20-2	14 Pin, Rectangular
	"	87A21-1	AC Outlet
	"	87A6-1	Speaker
	Plug	88A4-4	"
	"	89A22-2	AC Power Input
	Terminal Board	10A6-2	Antenna
	Plug	88A2-1	Audio Input
	Socket	88A1	" "
	Socket and Cable	A1596	11 Contact Round for 5Y3G Power Supply
	Plug	88A18-2	11 Contact Round
	Socket and Cable	A1598	11 Contact Round for 5U4G Power Supply
	Corona Ring	19A24	
	Spring	19A22	Focus Coil Mounting



TUBE PLACEMENT CHART



TUNER 94C9-2

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PRODUCTION CHANGES

CONTRAST CONTROL BIAS.

Capacitor C7 was originally a 4mfd. capacitor. This part has been changed to a 50mfd.-25volt electrolytic (67A4-7). This part should be used for replacement of C7 in all cases.

R19 has been changed from 27KΩ to 15KΩ to provide a greater contrast control range. The 15KΩ resistor should be used for replacement.

A few early units incorporated an RC filter in the selenuim bias rectifier (shown dotted on schematic). The resitor was 180Ω and the capacitor 50mfd. In the event that repairs are required in this circuit, remove the 180Ω resistor and the output filter. Since both the filters in this circuit were equal in value the defective one can be removed and the good unit used for C6. If the circuit is changed C7 must be a 50mfd unit.

A bias decoupling filter (R147 and C101) was used in early production only. It was deleted as it was found unnecessary.

MISCELLANEOUS CHANGES

Ceramic capacitors (C61 and C62) were used in the horizontal sync discriminator circuit. These capacitors have caused considerable service trouble and were replaced with two 100mmf, 10%, mica capacitors. In the event of replacement the mica capacitors should be used.

A sound IF decoupling capacitor (C102) has been delated in later production. C35 alone proved adequate.

Heater decoupling filter choke (L37) and filament bypass (C103) were deleted after 500 units.

R52 was inside the ratio delector transformer T23 in early production. In the event that T23 is replaced in a chassis that included R52 in T23, R52 must be added in addition to the transformer. Wire R52 under the chassis after replacing the transformer.

R80 was originally a 150KΩ ½W resistor. In later production this resistor was changed to a 150KΩ 1W, 10% resistor and the 1 Watt unit should be used for replacement.

R81 was originally an 82KΩ ½W resistor and was changed to an 82KΩ, 1 Watt unit in later production. The 1 Watt size should be used for replacement.

The high voltage filter R97 was originally part #60B14-105 (1 Meg, 1 Watt, 10%). Thispart has been changed to 60B28-33 (1 Meg, 1 Watt, 10%) to correct resistor failure and should be used for replacement.

Two alternate deflection yokes are being used. Yoke 94B2-1 is purchased without the two 560Ω resistors and the 56mmf capacitor but are wired in by production. Yoke 94B2-2 however is purchased completely wired. The capacitor in the 94B2-2 yoke is a 39mmf unit due to the difference in design. The two units are interchangeable when completely wired, however, since 94B2-1 is not supplied completely wired, the 94B2-2 unit should be used for service replacement.

In early production the interference traps (L26,C83,L27, C84) was not used on tuner A1582. These were added in later production. In the event that FM interference is encountered the trap assembly can be obtained under part #98A44-28.

In early production the low side of the secondary of the sound IF transformer L21 was returned to chassis. In later production an AVC network (C125, R145, R146) was added as shown on the schematic.

POWER SUPPLY CHANGES.

Early production sets had one receiver chassis and two power supply chassis. After a small number of these sets were run, the two power supply chassis were combined into one. When the two separate chassis were used the two power transformer (T1 and T2) were upright units but were changed to half-shell mounting when the power supplies were put on the same chassis. When the two power supplies were combined on one chassis, R65 was deleted.

To pass Underwriters inspection two 270KΩ bleeder resistors (R116,R117) were added as shown on the schematic. These resistors were deleted when the single power cable was used.

On late production fuse M3 (¼ Amp.) was added. A fuse conversion kit 98A50-8 can be ordered from the factory to make the changeover. This kit includes all parts necessary including the Fuse holder and self tapping screws for mounting. This circuit should changed to give fuse protection on any chassis that was not originally wired with the fuse. Mount the fuse holder between R98 and T4 in the high voltage box. Wire components as shown on schematic.

MODEL NUMBER SUFFIXES

Following is a list of letter suffixes which may appear after the model and chassis numbers which indicate variations in the circuit. "S" or "SN" indicates a 94C8-2 tuner, "T" or "TN" 94C9-2 tuner and "N" or "UL" indicates an A-1528 tuner. The "N" in every case indicates a non-underwriters approved model.

An "E" suffix indicates the use of 6AU6 tubes in the second and third video IF stages instead of 6AG5 tubes. The associated IF transformers are also changed when the 6AU6 tubes are used. (See Parts List).

For example model 30A15SNE indicates a non-underwriters approved model with a 94C8-2 tuner and that 6AU6 tubes are used in the 2nd and 3rd IF stages.

PULLING AT TOP OF PICTURE

If pulling shows up at the top of the picture the low frequency response of the horizontal sync discriminator circuit can be reduced by changing R78 and R79 from 470KΩ to 180KΩ. With this change the vertical sync pulses occuring at 60 times per second are less likely to momentarily upset the horizontal oscillator.

HORIZONTAL FREQUENCY ADJUSTMENT

If picture cannot be held in horizontal synchronization, proceed as follows.

1. Turn horizontal hold control to extreme counter-clockwise position.
2. Turn horizontal lock clockwise until picture falls out of sync.
3. Now turn horizontal lock counter-clockwise until picture just falls into sync.
4. Turn horizontal hold control fully clockwise and turn the channel switch to the next highest channel, then turn back to the original channel. The picture should fall into sync. If it does not, slowly rotate the horizontal hold control until the picture synchronizes. No more than 25% rotation should be required. If more is required check for tube or circuit component failure in the horizontal sync discriminatior (V21) or horizontal Osc. control (V22) circuits.

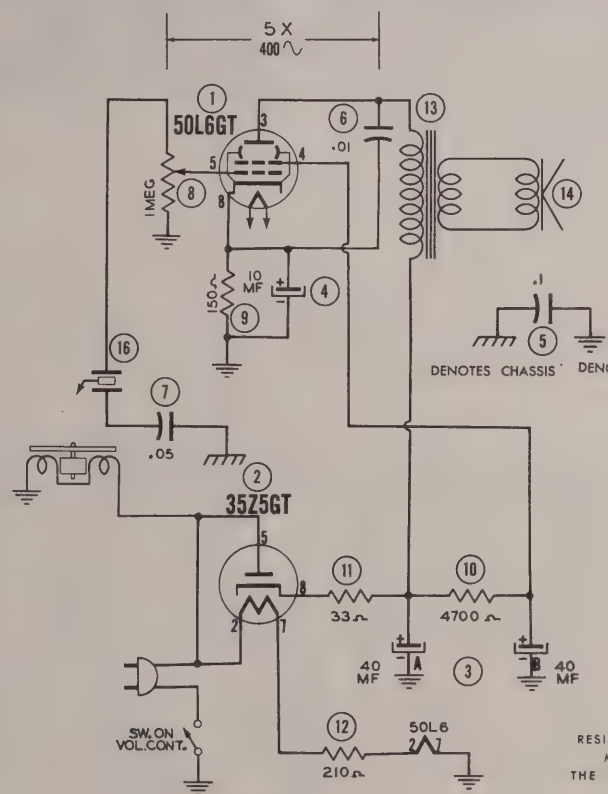
DISASSEMBLY INSTRUCTIONS

1. Remove 6 screws holding back panel and remove panel.
2. Remove 8 push-on type knobs on front of receiver.
3. Remove screw and bracket holding cable plug in and unplug cable.
4. Unplug audio lead from power supply chassis.
5. Remove 4 bolts in TV chassis & slide chassis out, being careful not to bind picture tube.
6. Unplug speaker.
7. Remove 4 bolts from power supply chassis mounting board and remove.
8. Remove mounting board from power supply chassis.
9. Remove 4 nuts and washers holding speaker and remove speaker.

AIRCASTLE, MODEL 7014

TRADE NAME	Aircastle, Models 7014, 7015
SUPPLIER	Spiegel, Inc., 1061 W.35th St. Chicago, Illinois
TYPE SET	AC Operated Phono Player with 2 Tube Amplifier
TUBES (TWO)	Types 50L6GT Power Output, 35Z5GT Rectifier

POWER SUPPLY 110-125 Volts AC RATING .23 Amp. @ 117 Volts AC



Pin No.	50L6GT Volt.	Res.
1	0V	Inf.
2	50VAC	70Ω
3	120VDC	40KΩ
4	105VAC	40KΩ
5	0V	1 Meg.
6	0V	Inf.
7	0V	0Ω
8	8.2VDC	150Ω

Pin No.	35Z5GT Volt.	Res.
1	0V	Inf.
2	117VAC	280Ω
3	105VAC	270Ω
4	0V	Inf.
5	117VAC	310Ω
6	0V	Inf.
7	75VAC	250Ω
8	125VDC	40KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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DATE 3/49 #495-3 SET #57 FOLDER 3

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		AIRCASTLE PART No.	STANDARD REPLACEMENT		
1	Power Output	50L6GT	50L6GT	7AC	
2	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	AIRCASTLE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	
3A	80	150		AF888D*	UP8415	DY-8040-150	EL-340*	Filter
B	40	150						Filter
4	10	25		PRS25/10	BR102A	M-10-25	TA-10	Cathode Bypass
5	.1	400	PC-8	484-.1	DT4P1	ST-4-1	TC-1	Line Isolation
6	.01	400	PC-1	484-.01	DT4S1	ST-4-01	TC-11	Output Plate Bypass
7	.05	400	PC-5	484-.05	DT4S5	ST-4-05	TC-15	Phono Isolation

*- Parallel sections to obtain desired capacity.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	
8A	1 Meg.	½	VC-3	D-13-137	AM-60-Z	Volume Control
B	Shaft		Not. Req.	E	KSS-3	Attach to 8A per Instructions.
C	Switch		Not. Req.	41	SW-A	Attach to 8A per Instructions.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES		
	RESISTANCE	WATTS	AIRCASTLE PART No.	IRC PART No.			
9	15Ω	½	CR-11	BTS-150	Br.-Grn.-Br.	Output Cathode	See Note
10	4700Ω	½	CR-15	BTS-4700	Yl.-Vi.-Red	Filter	
11	33Ω	½	CR-1		Or.-Or.-Blk.	Surge Limiter	
12	210Ω	5	WR-1	AB-200		Line Dropping	

Note: Some models use two 270Ω ½ w. Res. in parallel in this application.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRCASTLE PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
13	2000Ω	3.6Ω	176Ω	.6Ω	Partof SPK11	A-3876‡	T22S45‡	A-2928‡	‡ Bend mounting tabs down, file out slots and mount on original bracket.

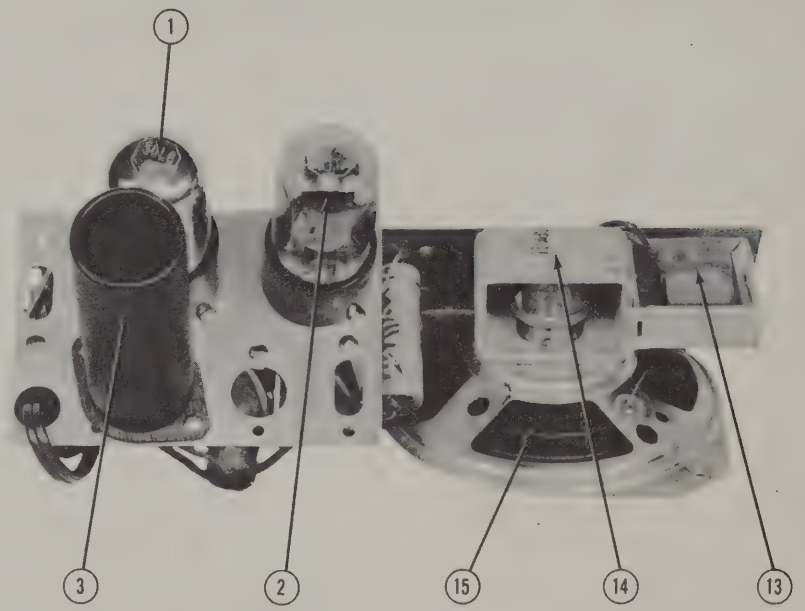
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AIRCASTLE PART No.	JENSEN PART No.	QUAM PART No.	
14	FIELD	V C Imp.	SPK-11	ST-113‡	4A07‡	‡ Trim Flange
	PM	3.6Ω		MOD P4-X		
15	CONE DIA	V C DIA				
	4 IN	9/16 IN				

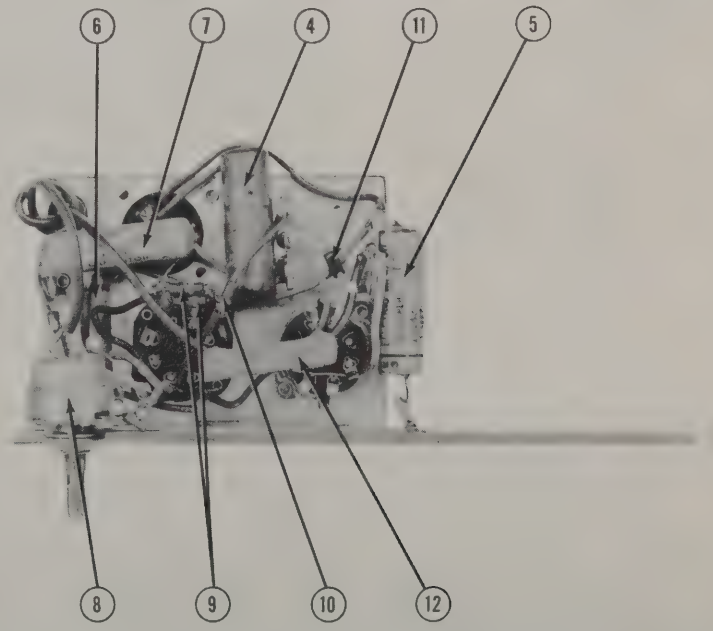
PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA		REMARKS
	AIRCASTLE PART No.	ASTATIC PART No.	
16		L-82A	

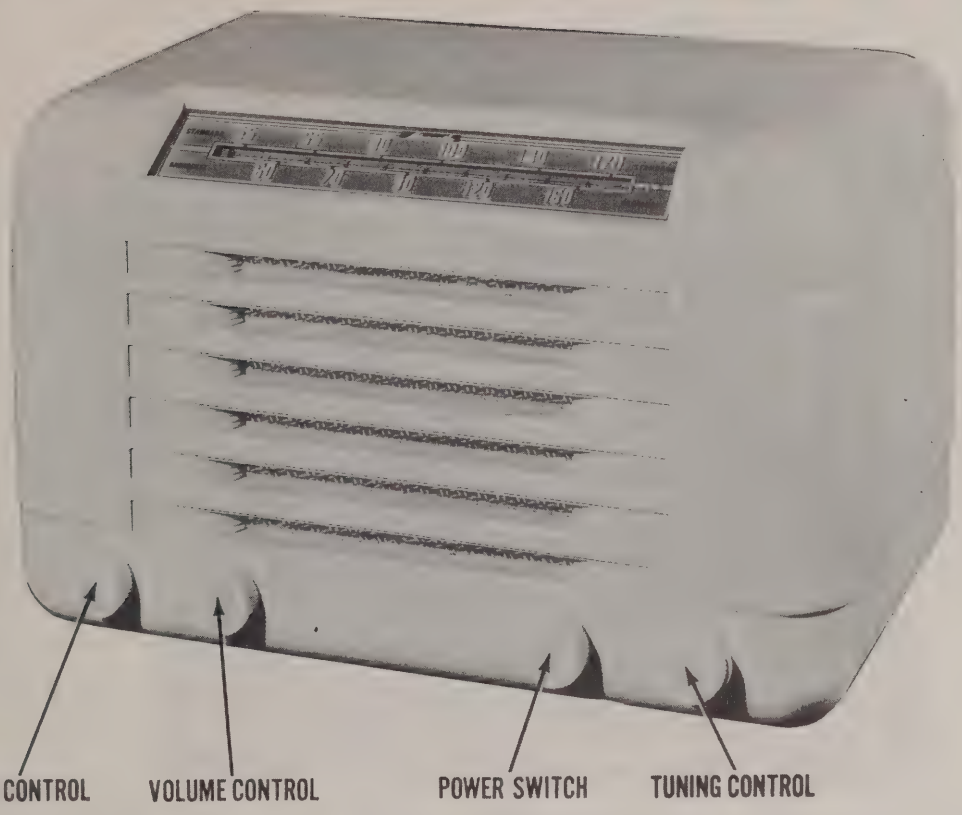
CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



AIRCASTLE MODELS
108014, 108504



AIRCASTLE MODELS
108014, 108504

AIRCASTLE, MODEL 108014

TRADE NAME	Aircastle, Models 108014, 108504
SUPPLIER	Spiegel, Inc. 1061 W. 35th St. Chicago, Ill.
TYPE SET	AC Operated Superheterodyne Receiver with Loop Ant.
TUBES (SIX)	Types 6SK7 RF Amp., 6SA7 Converter, 6SK7 IF Amp., 6SQ7 DET-AVC-AF, 6K6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .45 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1725KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1 MFD	High side to pin 8 (Grid) of 6SA7. Low side to chassis.	455KC	Tuning Cap fully open	Across Voice Coil	A1, A2 A3, A4	Adjust for maximum output.
2.	250MMFD	High side to external Ant terminal. (Link in Ant. position). Low side to chassis.	1725KC	Tuning Cap fully open	Across Voice Coil	A5	Adjust for maximum output.
3.	250MMFD	High side to external Ant terminal. (Link in Ant. position). Low side to chassis.	1500KC	Tune for maximum output.	Across Voice Coil	A6, A7	Adjust for maximum output.

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DATE 3/49 #495-4 SET #57 FOLDER #4

PARTS LIST AND DESCRIPTIONS

AIRCASTLE MODEL 108014

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SK7	6SK7	8N	
2	Converter	6SA7	6SA7	8R	
3	IF Amp.	6SK7	6SK7	8N	
4	DET-AVC-AF	6SQ7	6SQ7	8Q	
5	Power Output	6K6GT	6K6GT	7S	
6	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7	16	450	A18-274	PRS450-16	BR1645	M-16-450	UT-16	Filter
8	11	450	A18-279	PRS450-16	BR1645	M-16-450	UT-16	Filter
9	.01	600	A16-168	484-01	GT6S1	ST-6-01	TC-11	Output Plate Bypass *
10	.01	400	A16-156	484-01	GT4S1	ST-4-01	TC-11	Audio Coupling
11	.01	400	A16-156	484-01	GT4S1	ST-4-01	TC-11	Audio Coupling
12	.05	400	A16-158	484-05	GT4S5	ST-4-05	TC-15	AF Plate Decoupling
13	.01	400	A16-156	484-01	GT4S1	ST-4-01	TC-11	Tone Comp.
14	.05	200	A16-152	484-05	GT2S5	ST-4-05	TC-15	AVC Filter
15	.05	400	A16-158	484-05	GT4S5	ST-4-05	TC-15	IF Screen Bypass
16	.05	200	A16-152	484-05	GT2S5	ST-4-05	TC-15	IF Cathode Bypass
17	.05	400	A16-158	484-05	GT4S5	ST-4-05	TC-15	Conv. Screen Bypass
18	.05	400	A16-158	484-05	GT4S5	ST-4-05	TC-15	RF Screen Bypass
19	.05	200	A16-152	484-05	GT2S5	ST-4-05	TC-15	RF Cathode Bypass
20	.05	200	A16-152	484-05	GT2S5	ST-4-05	TC-15	AVC Filter
21	250	500	A15-176	1468-00025	5W5T25	MO.5-325	1FM-325	AF Plate Bypass
22	50	500	A16-175	1468-00005	5W5Q5	MO.5-45	1FM-45	Osc. Grid Cap
23	5	300	A83-355	1468-000005	5W5V5	MOS.5-55	MS-55	RF Coupling
24	50	500	A16-175	1469-00005	5R5Q5	MOS.5-45	MS-45	Fixed Trimmer Cer.
25	200	500		1468-0002	5W5T2	MO.5-32	1FM-32	Ant. Tuning Comp.
26	4.7	300	A83-355	1468-000005	5W5V5	MOS.5-55	MS-55	RF Coupling ** Cer.

*-Some models may use 2-.005 Mfd. in parallel in this application. Replacement same as Item 9.
**-Not used in all models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
27A	500KΩ	½	A24-169	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	E	KSS-3	Attach to 27A Per Instructions
28	3 Meg.	½	A26-123			Tone Control

RESISTORS

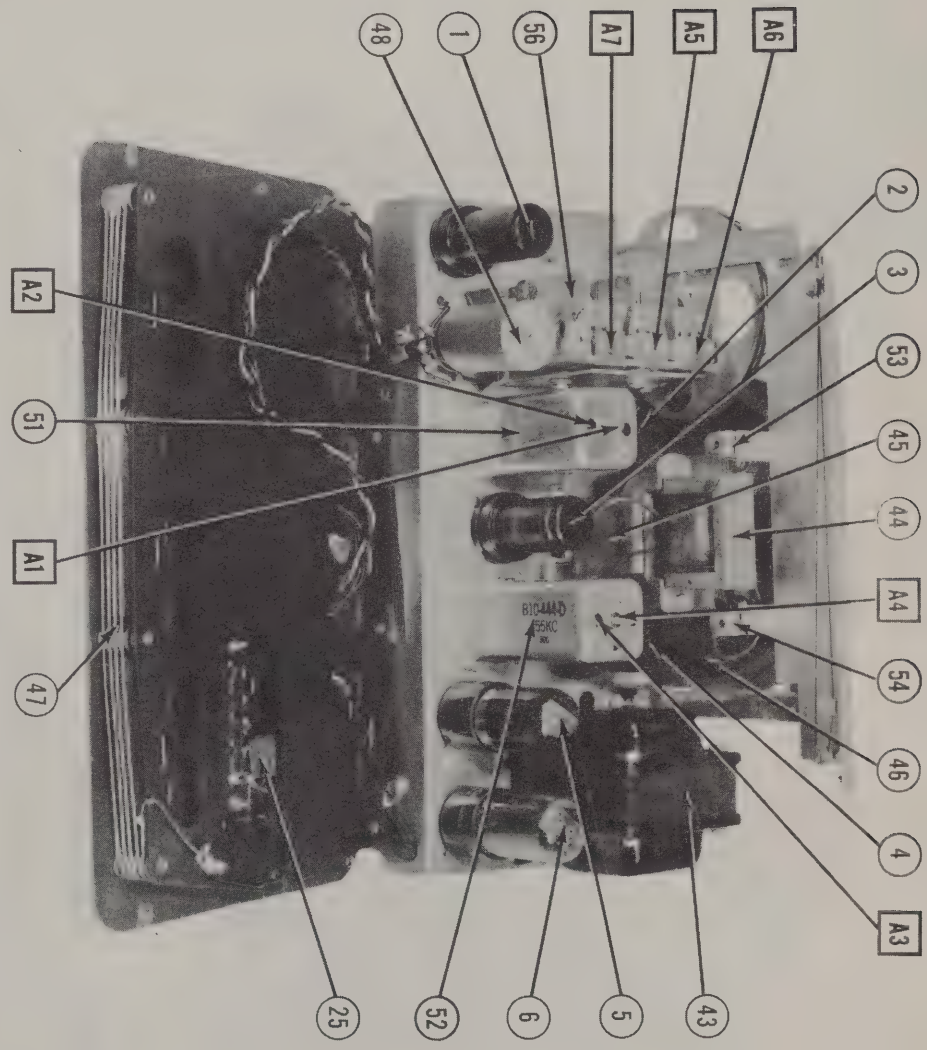
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	IDENTIFICATION CODES	
29	220KΩ	½	A60-667	BTS-220K	Red-Red-Yl.	AVC Net.
30	150Ω	½	A60-686	BW-½-150	Br.-Grn.-Br.	RF Cathode
31	100KΩ	½	A60-671	BTS-100K	Br.-Blk.-Yl.	RF Screen
32	27KΩ	1	A60-692	BTA-27K	Red-Vi.-Or.	Conv. Screen
33	22KΩ	½	A60-659	BTS-22K	Red-Red-Or.	Osc. Grid
34	150Ω	½	A60-686	BW-½-150	Br.-Grn.-Br.	IF Cathode
35	100KΩ	½	A60-671	BTS-100K	Br.-Blk.-Yl.	IF Screen
36	10 Meg.	½	A60-663	BTS-10 Meg.	Br.-Blk.-Blue	AF Grid
37	220KΩ	½	A60-667	BTS-220K	Red-Red-Yl.	AF Plate Load
38	220KΩ	½	A60-667	BTS-220K	Red-Red-Yl.	AF Plate Decoup.
39	470KΩ	½	A60-662	BTS-470K	Yl.-Vi.-Yl.	Output Grid
40	560Ω	1	A60-701	BTA-560	Grn.-Blue-Br.	Output Cathode
41	82KΩ	1	A60-700	BTA-82K	Gray-Red-Or.	Bias
42	1000Ω	2	A60-699	BT-2-1000	Br.-Blk.-Red	Filter

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: AIRCASTLE PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
43	117VAC @ .45A	580VCT .056ADC	5.1VAC @ 2.0A	6.4VAC @ 1.95A	C80-223	P-6119#	T22R02	P-3160††

††-Drill new mounting holes and add series res. to reduce plate voltage.
#-Mount vertically with universal mounting brackets.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRCASTLE PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
44	6900Ω	3.3Ω	385Ω	..7Ω	A80.-222	A-3823	T22S47‡	A-2901	‡ Drill new mounting holes.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AIRCASTLE PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V C Imp.		ST-109†		
45	PM	3.3Ω	B 79-341	MOD P6-W	6A15†	† Trim Flange and Drill and Tap Magnet Frame.
	CONE DIA	V C DIA				
46	6 1/8 IN	9/16 IN				

R F COILS

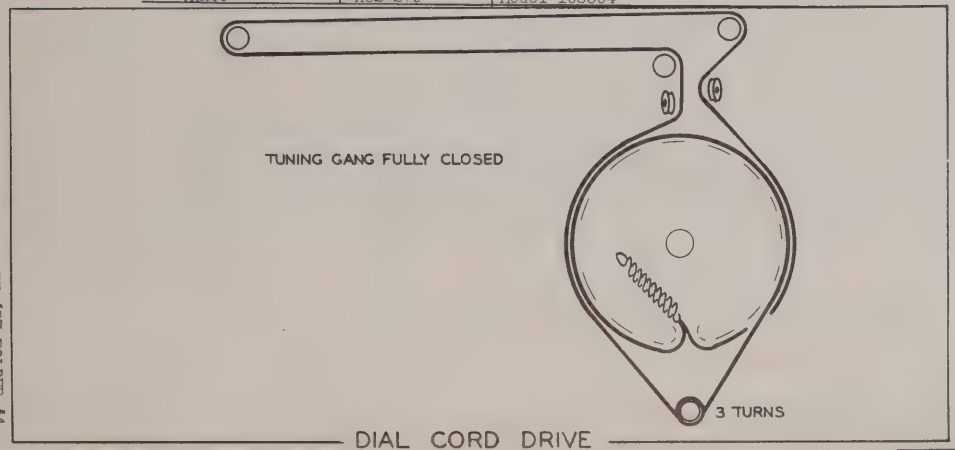
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	AIRCASTLE PART No.	MEISSNER PART No.	
47A	Loop Ant.		0Ω	S84-251		Model 108014
47B	Loop Ant.			S84-252		Model 108504
48	Ant. Coil	§.8Ω	3.5Ω	B10-459		§ 60Ω Pickup coil used for ext. Ant.
49	RF Coil	75Ω	3Ω	B10-452	14-1057	
50	Osc. Coil		6.5Ω	A10-446	14-1060	
51	Input IF	16Ω	16Ω	B10-412	16-5712	
52	Output IF	18.5Ω		B10-444		

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					AIRCASTLE PART No.		
53	Bayonet	6-8V	0.15A	Brown			Type #47
54	Bayonet	6-8V	0.15A	Brown			Type #47

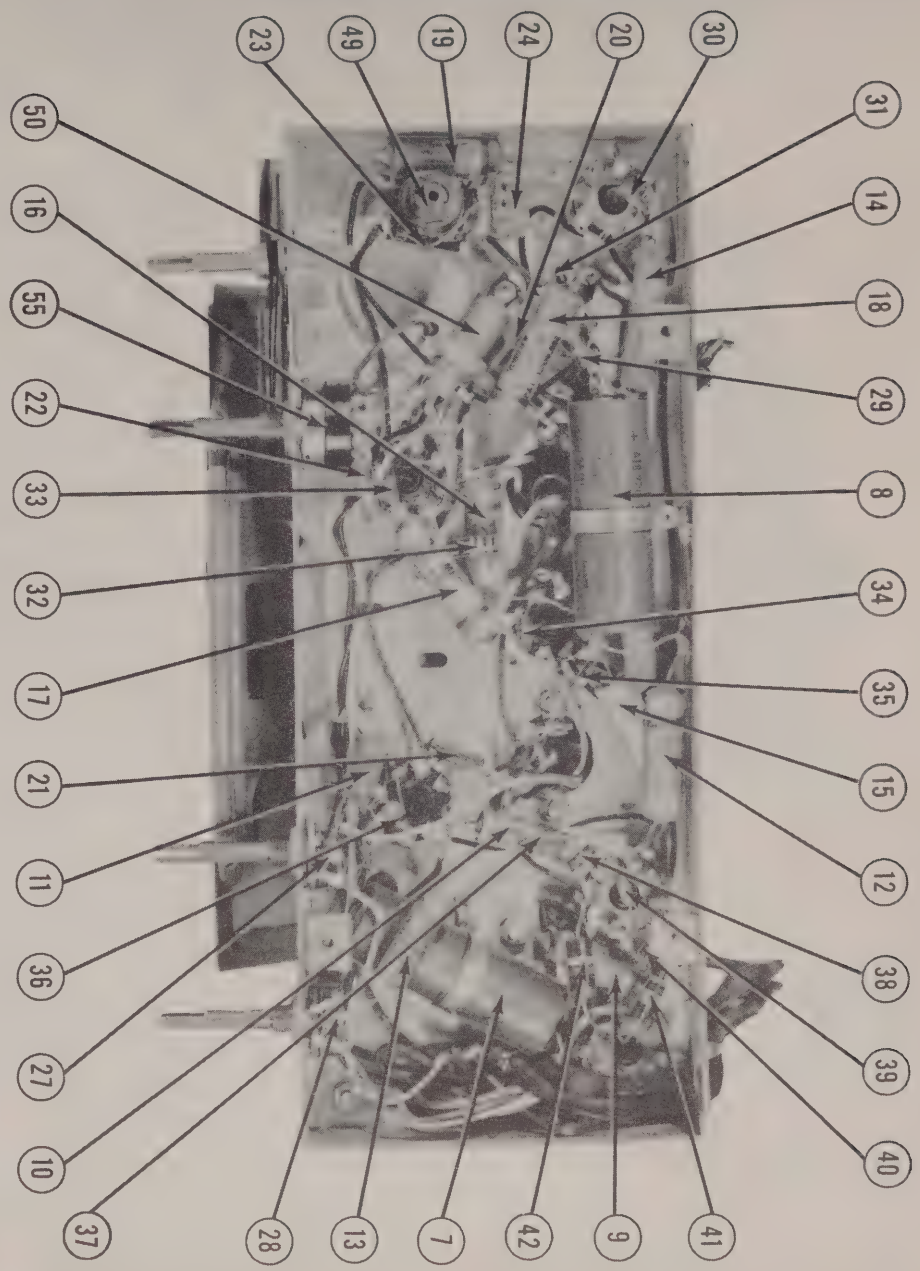
MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
55	Switch		On-Off
56	3 Gang Var. Cap	B19-186	(26-459MMF,21-451MMF,29-193MMF)
	Cabinet	A42-401	Model 108014
	Cabinet	D42-379	Model 108504
	Dial Scale	C67-535	
	Dial Pointer	A58-65	
	Knob	A52-280	Model 108014
	Knob	A52-279	Model 108504



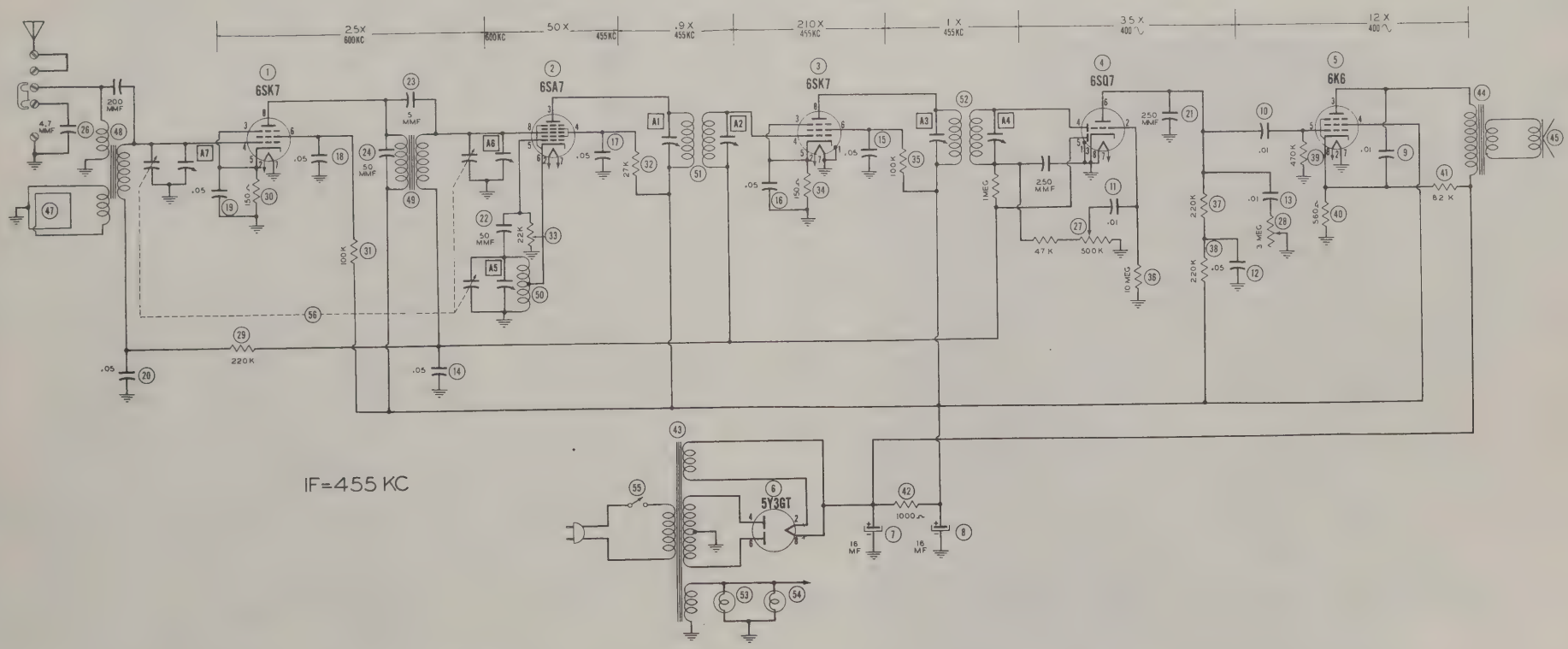
DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



AIRCASTLE MODEL 108014

AIRCASTLE MODEL 108014



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6BK7	0V	0V	1.4VDC	-.3VDC	1.4VDC	83VDC	6.4VAC	260VDC
2	6SA7	0V	0V	260VDC	70VDC	§-7.2VDC	0V	6.4VAC	-.6VDC
3	6SK7	0V	0V	1.4VDC	-.6VDC	1.4VDC	70VDC	6.4VAC	260VDC
4	6SQ7	0V	-.6VDC	0V	-.6VDC	-.5VDC	105VDC	6.4VAC	0V
5	6K6GT	0V	0V	290VDC	260VDC	0V	180VDC	6.4VAC	20VDC
6	5Y3GT	295VDC	295VDC	0V	260VAC	0V	290VAC	0V	295VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0Ω	0Ω	150Ω	1.8 Meg.	150Ω	180KΩ	.1Ω	80KΩ
2	6SA7	0Ω	0Ω	80KΩ	110KΩ	28KΩ	0Ω	.1Ω	1.5 Meg.
3	6SK7	0Ω	0Ω	150Ω	1.5 Meg.	150Ω	180KΩ	.1Ω	80KΩ
4	6SQ7	0Ω	10 Meg.	0Ω	1.5 Meg.	550KΩ	520KΩ	.1Ω	0Ω
5	6K6GT	0Ω	0Ω	80KΩ	80KΩ	470KΩ	300KΩ	.1Ω	560Ω
6	5Y3GT	80KΩ	80KΩ	Inf.	220Ω	Inf.	230Ω	Inf.	80KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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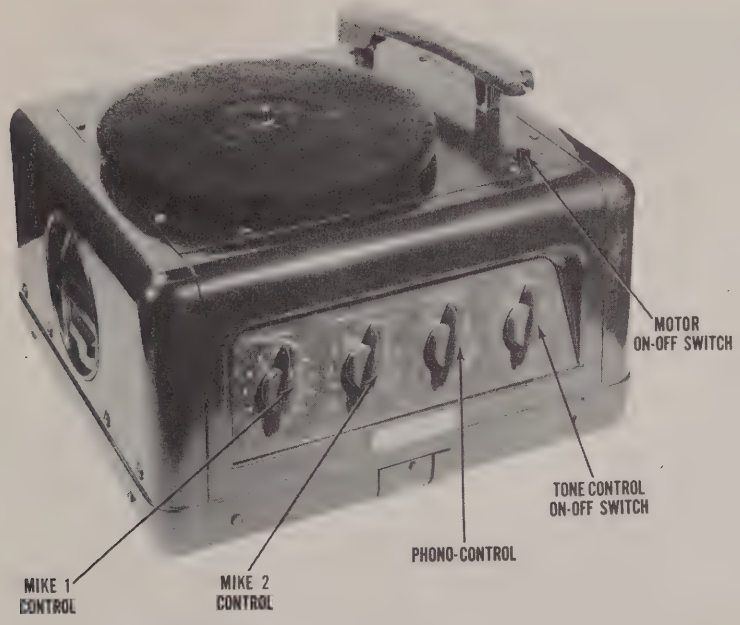
495-4

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

AIRLINE MODELS 64BR-7100A, 64BR-7110A, 64BR-7120A



AIRLINE MODEL 64BR-7110A

TRADE NAME	Airline, Models 64BR-7100A, 64BR-7110A, 64BR-7120A
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Ill.
TYPE SET	AC Operated 3 Channel Audio Amplifier.
TUBES (SIX)	Types 12SC7 MIC Pre-Amp., 12SQ7 Tone Control- Mixer, 6SL7GT Phase Inverter (2) 6L6GA Power Output, 5U4G Rectifier.
POWER SUPPLY	105-125 Volts AC
RATING	.86 Amp. @ 117 Volts AC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SC7	0V	60VDC	0V	0V	50VDC	.5VDC	11VDC	0V
2	12SQ7	0V	0V	1.3VDC	1.3VDC	1.3VDC	140VDC	21VDC	11VDC
3	6SL7GT	0V	130VDC	1.4VDC	0V	130VDC	1.4VDC	6.5VAC	0V
4	6L6G	0V	0V	310VDC	315VDC	0V	0V	6.5VAC	21VDC
5	6L6G	0V	0V	310VDC	315VDC	0V	0V	6.5VAC	21VDC
6	5U4G	0V	310VDC	0V	290VAC	0V	290VAC	0V	320VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SC7	0Ω	400KΩ	2.2 Meg.	2.2 Meg.	400KΩ	560Ω	12Ω	0Ω
2	12SQ7	0Ω	250KΩ	4.7KΩ	4.7KΩ	4.7KΩ	230KΩ	24Ω	12Ω
3	6SL7GT	400KΩ	220KΩ	820Ω	3.3KΩ	220KΩ	820Ω	.1Ω	0Ω
4	6L6G	0Ω	0Ω	90KΩ	90KΩ	100KΩ	Inf.	.1Ω	24Ω
5	6L6G	0Ω	0Ω	90KΩ	90KΩ	100KΩ	Inf.	.1Ω	24Ω
6	5U4G	Inf.	90KΩ	Inf.	63Ω	Inf.	68Ω	Inf.	90KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - All controls at minimum, proper output load connected.

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DATE 3/49-#495-5 SET #57-FOLDER #5

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		AIRLINE PART No.	STANDARD REPLACEMENT		
1	MIC. Pre-Amp.	12SC7	12SC7	8S	
2	Tone Control-Mixer	12SQ7	12SQ7	8Q	
3	Phase Inverter	6SL7GT	6SL7GT	8BD	
4	Power Output	6L6GA	6L6GA	7AC	
5	Power Output	6L6GA	6L6GA	7AC	
6	Rectifier	5U4G	5U4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	AIRLINE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	
7	16	475	A-8C-10856	AF4J	UP2050	DY-20-525	EL-2	Filter
8	8	450	A-8C-10857	AF2J	UP1045	DY-10-450	EL-1	"
9A	8	450	A-8C-10858	AF22J	UP1145	DY-2X10-450	EL-210	Decoupling
B	8	450						"
10	10	50	A-8C-11462	PRS50/10	BR105	M-10-50	TA-510	Output Cathode Bypass
11	10	25	A-8C-10959	PRS25/10	BR102A	M-10-25	TA-10	MIC Amp.Cathode Bypass
12	.1	600	C-8D-10983	684-.1	GT6P1	ST-6-1	TC-1	Audio Coupling
13	.1	600	C-8D-10983	684-.1	GT6P1	ST-6-1	TC-1	" "
14	.05	600	C-8D-10982	684-05	GT6S5	ST-6-05	TC-15	" "
15	.012	600	C-8D-11476	684-01	GT6S1	ST-6-01	TC-11	Tone Compensation
16	.05	200	C-8D-11012	464-05	GT2S5	ST-4-05	TC-15	" "
17	.05	600	C-8D-10982	684-05	GT6S5	ST-6-05	TC-15	Audio Coupling
18	.05	600	C-8D-10982	684-05	GT6S5	ST-6-5	TC-15	" "

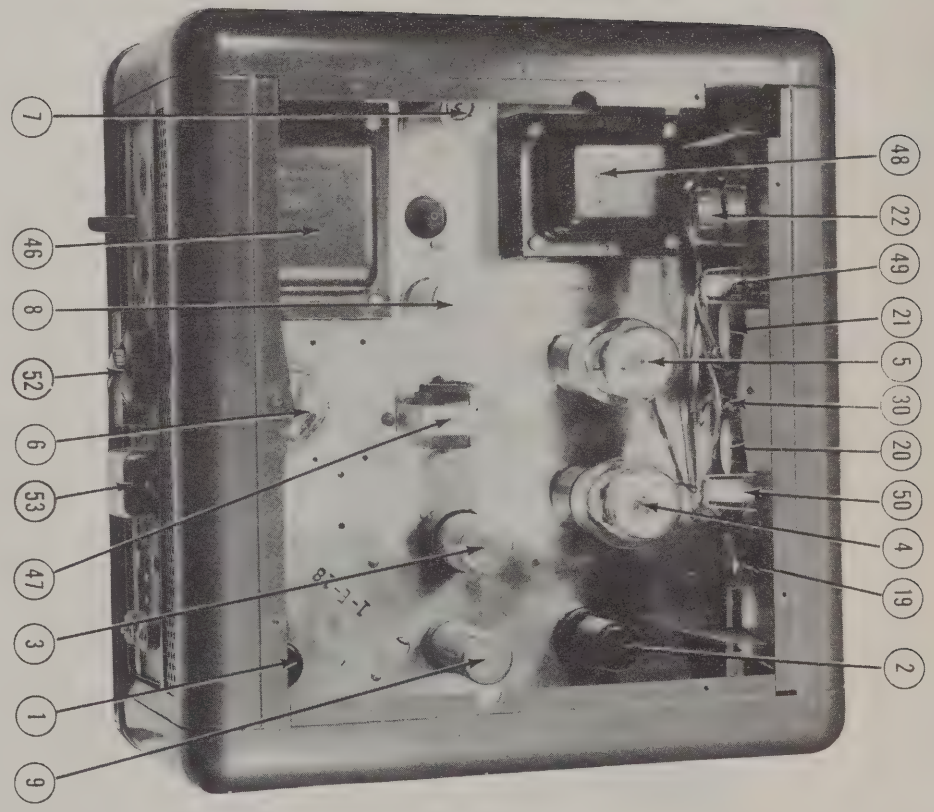
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	AIRLINE PART No.	IRC PART No.	CLAROSTAT PART No.	
19A	1 Meg.	½	A-10B-10846	D13-137	M-63-Z	Mike 1 Control.
B	Shaft		Not Req.	A	Not Req.	Attach to 19A per Instr.
20A	1 Meg.	½	A-10B-10846	D13-137	M-63-Z	Mike 2 Control
B	Shaft		Not Req.	A	Not Req.	Attach to 20A per Instr.
21	2Meg.	½	A-10B-10847			Phono control ta ped @ 1 Meg.
22A	1 Meg.	½	A-10B-10845	D11-137	M-61-S	Tone control
B	Shaft		Not Req.	A	Not Req.	Attach to 22A per Instr.
C	Switch		Not Req.	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES	
	RESISTANCE	WATTS	AIRLINE PART No.	IRC PART No.		
23	2.2 Meg.	½	C-9B1-102	BTS-2.2 Meg.	Red-Red-Grn.	1st MIC Amp. Grid.
24	220KΩ	½	C-9B1-90	BTS-220K	Red- Red- Yl.	1st MIC Amp. Plate Load
25	2.2 Meg.	½	C-9B1-102	BTS-2.2 Meg.	Red- Red- Grn.	2nd MIC Amp. Grid.
26	220KΩ	½	C-9B1-90	BTS-220K	Red- Red- Yl.	2nd MIC Amp. Plate Load
27	560Ω	½	C-9B1-59	BTS-560	Grn.-Blue-Br.	MIC Amp. Cathode
28	100Ω	½	C-9B1-86	BTS-100K	Br.-Blk.-Yl.	Isolation
29	100K	½	C-9B1-86	BTS-100K	Br.-Blk.-Yl.	"
30	560KΩ	½	C-9B1-95	BTS-560K	Grn.- Blue-Yl.	"
31	56KΩ	½	C-9B1-83	BTS-56K	Grn.-Blue-Or.	Mixer Plate Load
32	4700Ω	½	C-9B1-70	BTS-4700	Yl.-Vi.-Red	Mixer Cathode
33	5600Ω	½	C-9B1-71	BTS-5600	Grn.-Blue-Red	Tone Comp.
34	56KΩ	½	C-9B1-83	BTS-56K	Grn.-Blue-Or.	Decoupling
35	27KΩ	½	C-9B1-79	BTS-27K	Red-Vi.-Or.	"
36	390KΩ	½	C-9B1-83	BTS-390K	Or.-White-Yl.	AF Grid.
37	15KΩ	½	C-9B1-76	BTS-15K	Br.-Grn.-Or.	" "
38	100KΩ	½	C-9B1-86	BTS-100K	Br.-Blk.-Yl.	AF Plate Load
39	820Ω	½	C-9B1-61	BTS-820	Gray-Red-Br.	AF Cathode
40	3300Ω	½	C-9B1-171	BTS-3300	Or.-Or.-Red	Phase Inv. Grid.
41	100KΩ	½	C-9B1-86	BTS-100K	Br.-Blk.-Yl.	Phase Inv. Plate Load
42	100KΩ	½	C-9B1-86	BTS-100K	Br.-Blk.-Yl.	Output Grid.
43	100KΩ	½	C-9B1-86	BTS-100K	Br.-Blk.-Yl.	" "
44	8200Ω	½	C-9B1-73	BTS-8200	Gray-Red-Red	Output Cathode
45	27KΩ	½	C-9B1-79	BTS-27K	Red-Vi.-Or.	Feed Back

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	AIRLINE PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
46	117 VAC @.86A	580 VCT .14 ADC	5.2 VAC @ 3.0A	6.5 VAC @2.36A	BEC-12A-11336	P-6314 + *	T22R06 *	P-2953 * +

* Drill new mounting holes.
\+ Add series Res. to reduce plate voltage.

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000)	AIRLINE PART NO.	STANCOR PART NO.	THORDARSON PART NO.	MERIT PART No.	
47	.0085A	270Ω	2.5 HY.	BEB-16B-11338	C-1706#	T20C53 #	C-2977#	# Drill new mounting hole.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRLINE PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
48	5300Ω CT	500Ω 6Ω 4Ω 2.6Ω 2Ω	230Ω CT	48Ω .6Ω .36Ω .3Ω .28Ω	BEB-12C-11337	A-3800 *	T22S70 *		* Drill new mounting holes.

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					AIRLINE PART No.		
49	Bayonet	6-8V	0.15A	Brown	BEB-46A-10753		Type #47
50	"	"	"	"	"		"

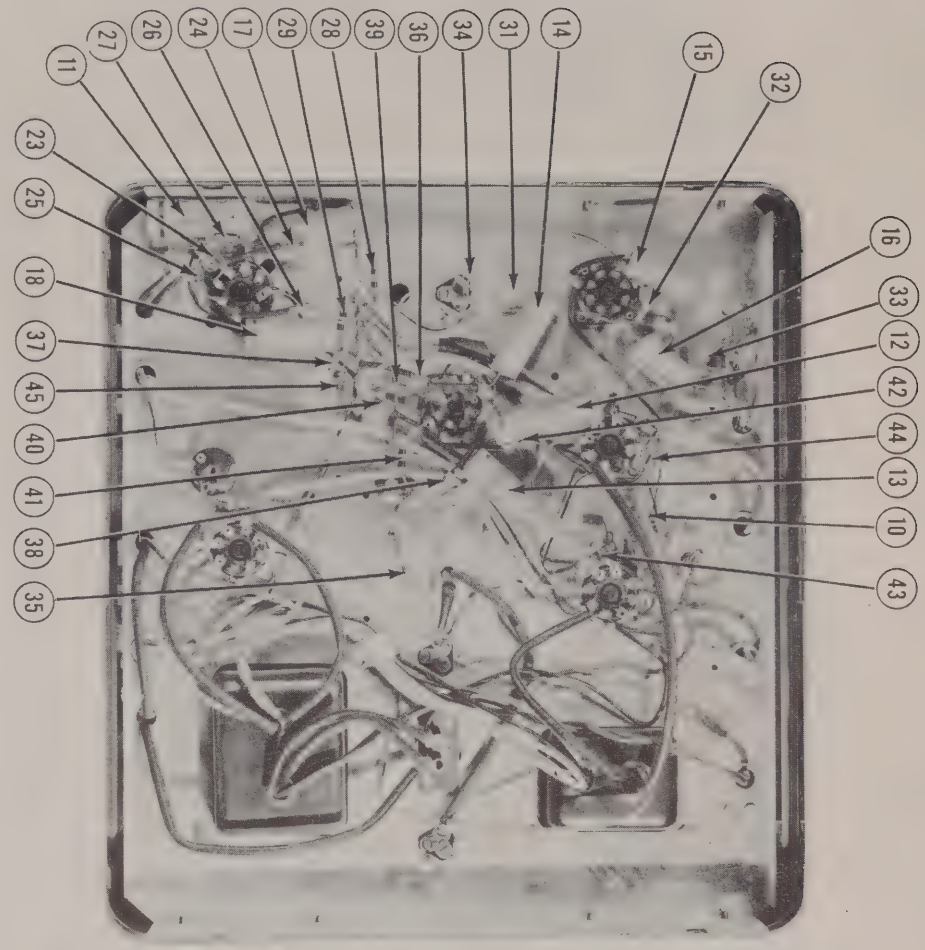
PHONO CARTRIDGE

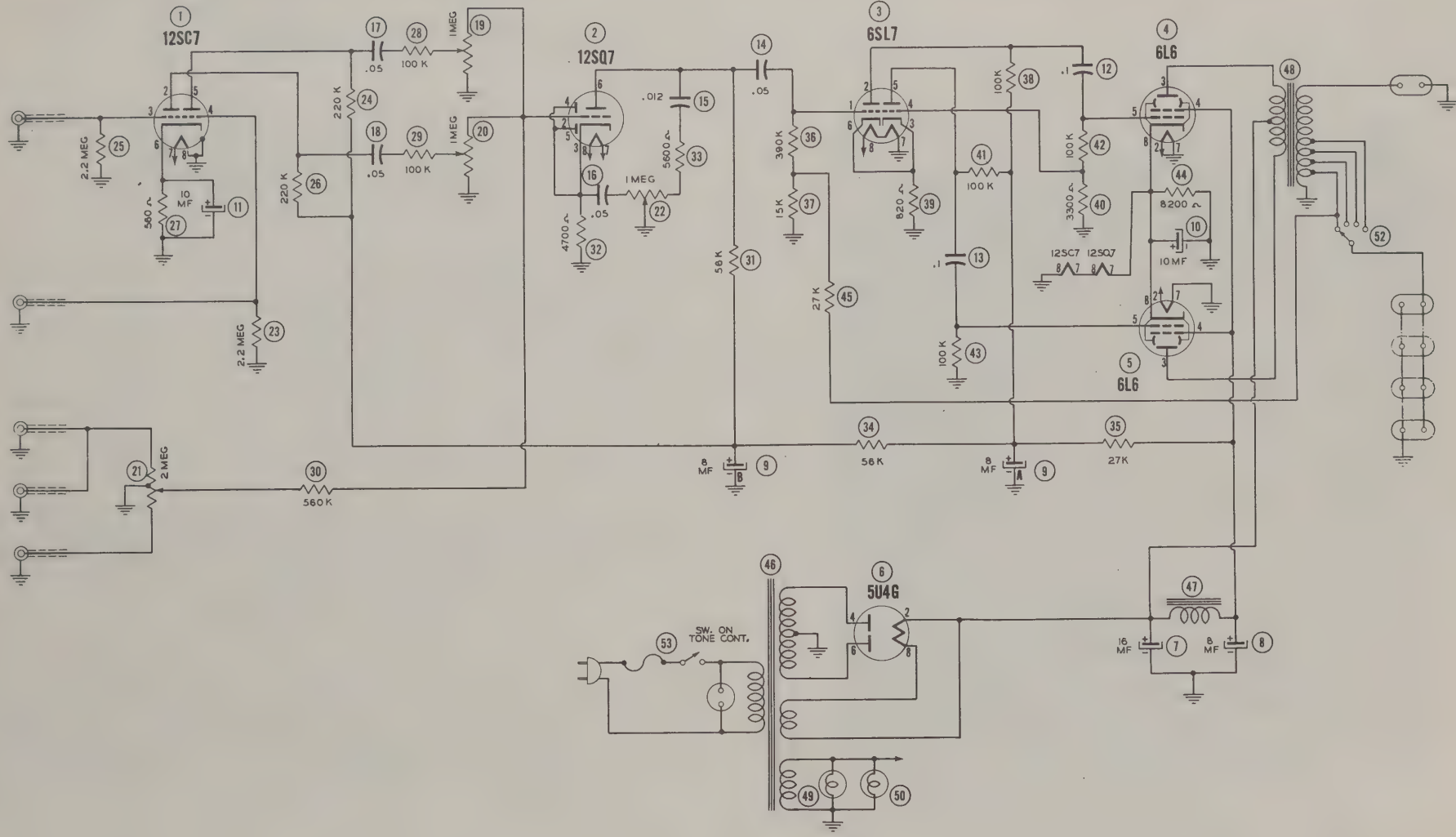
ITEM No.	REPLACEMENT DATA		REMARKS
	AIRLINE PART No.	ASTATIC PART No.	
51	BE8K-12066	L-70A	

MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
52	Switch	BEA-20H-10852	Impedence Selector
53	Fuse	BEA- 46B-2717	2 Amps.
	Knob	BEA-5B-10848-52	

CHASSIS—BOTTOM VIEW





A PHOTOFACT STANDARD NOTATION SCHEMATIC

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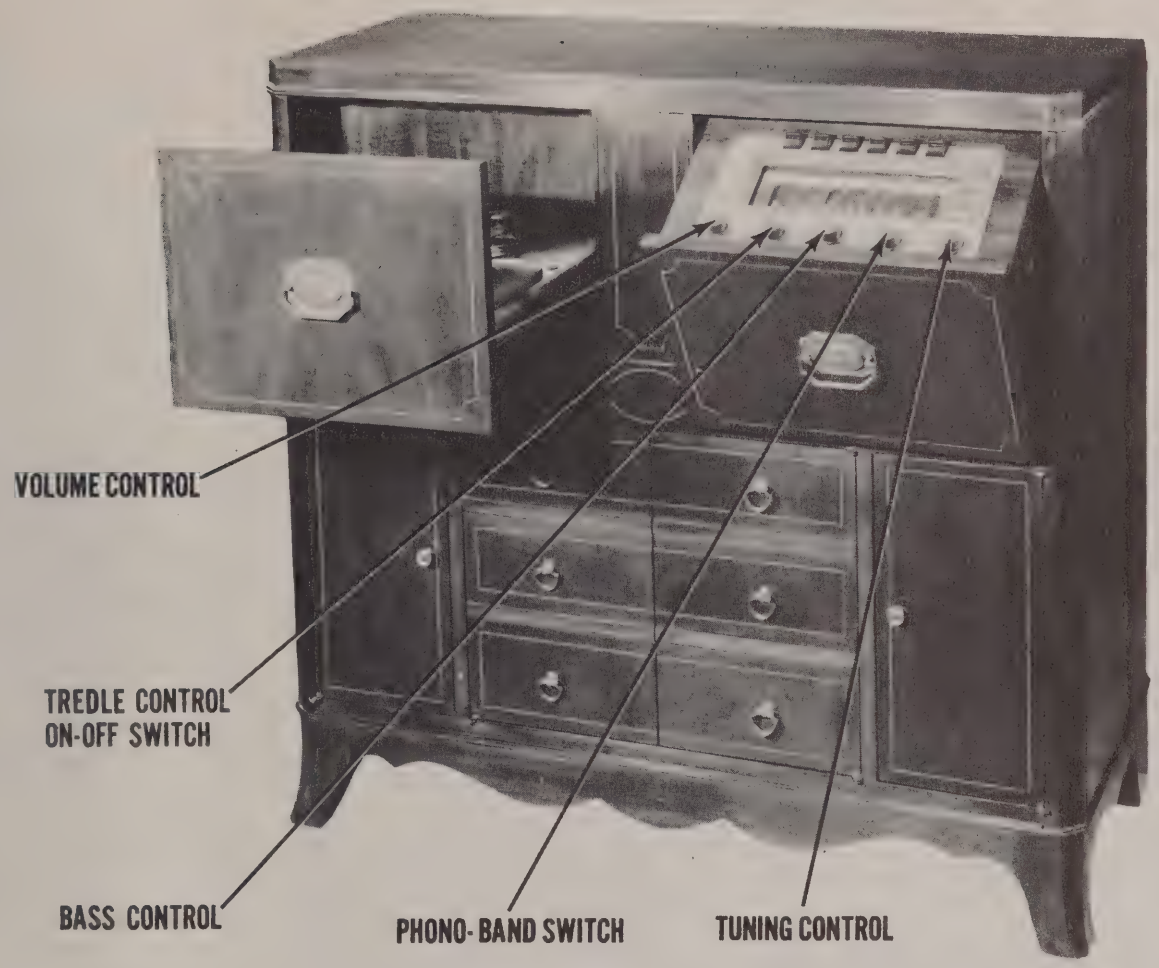
CROSLEY
MODEL 9-207M



CROSLEY
MODEL 9-207M

CROSLEY MODEL 9-207M

TRADE NAME	Crosley, Model 9-207M
MANUFACTURER	Crosley Corp., 1329 Arlington St. Cincinnati, Ohio
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Antenna.
TUBES(ELEVEN)	Types 6SG7 RF Amp., 7F8 Oscillator, 6AC7 Mixer, 6SG7 1st IF Amp,, 6SG7 FM 2nd IF Amp., 6AL5 FM Ratio Det., 6SQ7 AM Det.- AVC-AF, 6SQ7 Phase Inv.. (2)6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	105-125 Volts AC — RATING .76 Amp., @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1600KC — SHORT WAVE 9.45-11.9MC — FREQ. MOD. 88-108MC.

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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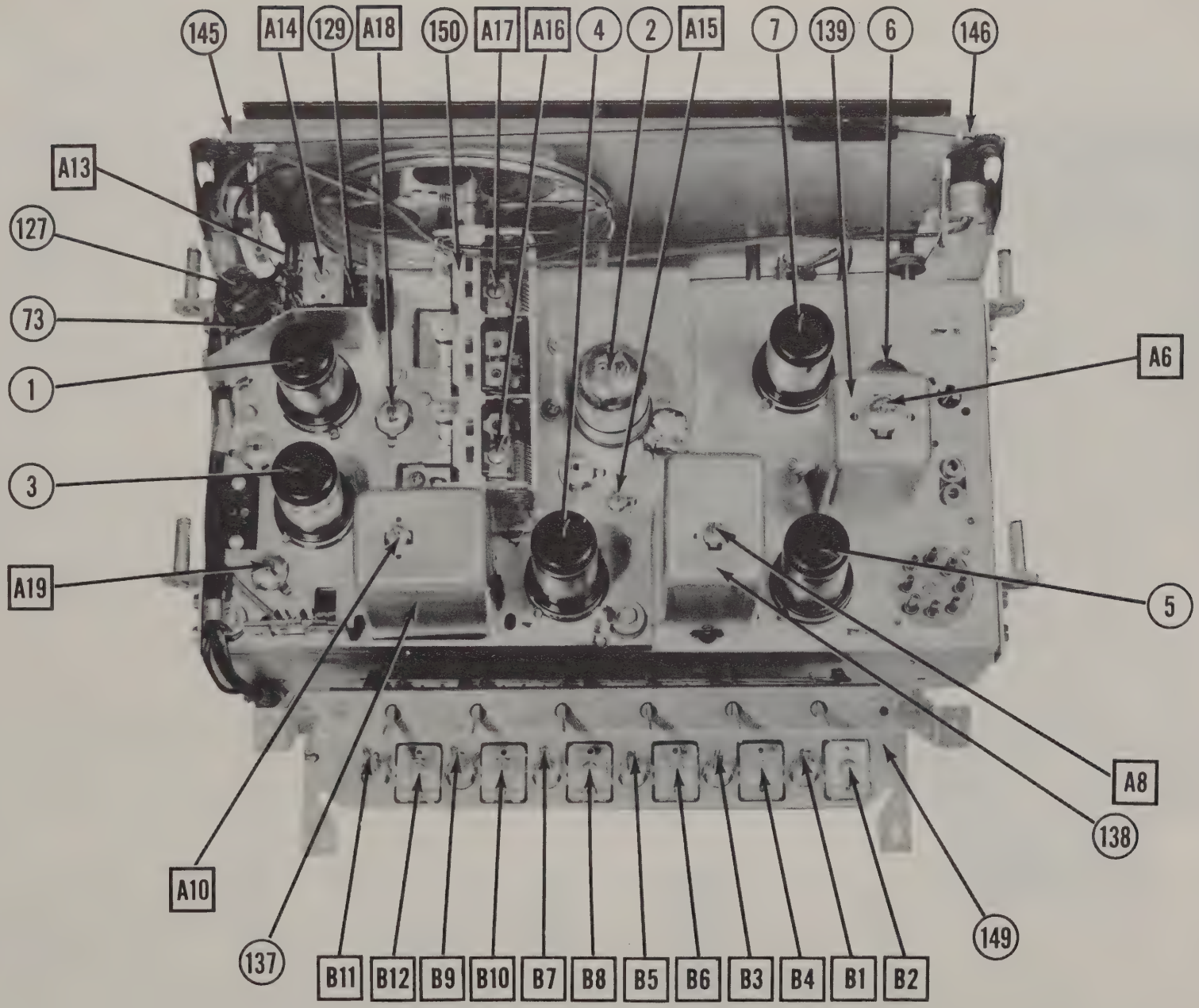
DATE 3/49 #495-6 SET #57-FOLDER #6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CROSLEY
MODEL 9-207M

PAGE 3

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SG7	6SG7	8BK	
2	Oscillator	7F8	7F8	8BW	
3	Mixer	6AC7	6AC7	8N	
4	1st IF	6SG7	6SG7	8BK	
5	FM 2nd IF Amp.	6SG7	6SG7	8BK	
6	FM Ratio Det.	6AL5	6AL5	6BT	
7	AM Det.-AVC-AF	6SQ7	6SQ7	8Q	
8	Phase Inverter	6SQ7	6SQ7	8Q	
9	Power Output	6V6GT	6V6GT	7AC	
10	" "	6V6GT	6V6GT	7AC	
11	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
12	30	450	143062	PRS450-30	EZ3045	DR-30-450	UT-30	Filter-Red
13A	40	450	143089	AF862JA	UF4314-C	DY-406	EL-424	◓ Filter
B	20	450						■ "
C	10	450						▲ "
D	20	25						Cathode Bypass
14	4	50	142908	PRS150/4	BR415	R-4-450	TA-55	Stabilizing Cap.
15	.003	600	39001-76	684-003	GT6D3	ST-6-003	TC-23	Output Plate Bypass
16	.003	600	39001-76	684-003	GT6D3	ST-6-003	TC-23	" " "
17	.05	600	39001-17	684-05	GT6S5	ST-6-05	TC-15	Audio Coupling
18	.005	600	39001-11	684-005	GT6D5	ST-6-005	TC-25	" "
19	.005	600	39001-11	684-005	GT6D5	ST-6-005	TC-25	" "
20	.005	600	39001-11	684-005	GT6D5	ST-6-005	TC-25	" "
21	.2	200	39001-87	484-.2	GT4P2	ST-4-2	68P24	Bias Filter
22	.01	600	39001-13	684-01	GT6S1	ST-6-01	TC-11	Tone Compensation
23	.005	600	39001-11	684-005	GT6D5	ST-6-005	TC-25	" "
24	.005	600	39001-11	684-005	GT6D5	ST-6-005	TC-25	" "
25	.005	600	39001-11	684-005	GT6D5	ST-6-005	TC-25	Audio Coupling
26	.025	600	39001-80	684-025	GT6S25	ST-6-03	TC-13	Decoupling
27	.025	600	39001-80	684-025	GT6S25	ST-6-03	TC-13	2nd IF Decoupling
28	.02	200	39001-80	484-02	GT2S2	ST-4-02	TC-12	2nd IF Cathode
29	.01	600	39001-13	684-01	GT6S1	ST-6-01	TC-11	1st IF Decoupling
30	.005	600	39001-11	684-005	GT6D5	ST-6-005	TC-25	1st IF Screen Bypass
31	.01	200	39001-13	484-01	GT2S1	ST-4-01	TC-11	AVC Filter
32	.05	200	39001-17	484-05	GT2S5	ST-4-05	TC-15	" "
33	.005	600	39001-11	684-005	GT6D5	ST-6-005	TC-25	Mixer Decoupling
34	.005	600	39001-11	684-005	GT6D5	ST-6-005	TC-25	Mixer Screen Bypass
35	.01	600	39001-13	684-01	GT6S1	ST-6-01	TC-11	RF Decoupling
36	.005	600	39001-11	684-005	GT6D5	ST-6-005	TC-25	RF Screen Bypass
37	.01	600	39001-13	684-01	GT6S1	ST-6-01	TC-11	Decoupling
38	.002	600	39001-74	684-002	GT6D2	ST-6-002	TC-22	De-emphasis
39	50	300	143686-1	1468-00005	5W5Q5	MO.5-45	1FM-45	AF Plate Bypass-Cer.
40	33	300	143686-2	1468-00004	5W5Q3	MO.5-44	1FM-44	Tone Compensation-Cer.
41	1000	300	137727-8	1468-001	1W5D1	MO.3-21	1FM-21	RF Bypass "
42	1000	300	137727-8	1468-001	1W5D1	MO.3-21	1FM-21	AVC Filter "
43	1000	300	137727-8	1468-001	1W5D1	MO.3-21	1FM-21	" " "
44	50	300	143686-1	1468-00005	5W5Q5	MO.5-45	1FM-45	RF Bypass "
45	5000	300	137727-38	1467-005	1D5D5	MW.5-25	1FM-25	Fil. Bypass "
46	5000	300	137727-38	1467-005	1D5D5	MW.5-25	1FM-25	" " "
47	1000	300	137727-8	1468-001	1W5D1	MO.3-21	1FM-21	" " "
48	1000	300	137727-8	1468-001	1W5D1	MO.3-21	1FM-21	" " "
49	1000	300	137727-8	1468-001	1W5D1	MO.3-21	1FM-21	" " "
50	1000	300	137727-8	1468-001	1W5D1	MO.3-21	1FM-21	" " "
51	1000	300	137727-8	1468-001	1W5D1	MO.3-21	1FM-21	Osc. Feedback "
52	33	500	137727-53	1468-00004	5W5Q3	MO.5-43	MS-43	Osc. Feedback "
53	33	500	137727-53	1468-00004	5W5Q3	MO.5-43	MS-43	Osc. Grid Cap. "
54	47	300	137727-31	1468-00005	5W5Q5	MO.5-45	1FM-45	" " " "
55	5	500	137727-79	1468-000005	5W5V5	MO.5-55	MS-55	Osc. Coupling "
56	2.2	300	137398-4					" " " "
57	3	500	137727-78					Fixed Trimmer "
58	96	200	137727-71					" " " "
59	200	500	137499-23	1469-0002	2R5T2	MOS.5-32	MS-32	Fixed Padder-Silver "
60	680	500	137499-20					" " " "
61	3300	500	137498-4					" " Mica "
62	5	300	137398-6	1468-000005	5W5V5	MO.5-55	MS-55	Osc. Coupling "

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDARSON PART No.	REPLACEMENT DATA: MERIT PART No.
122	117V AC @ .76A	620V CT .105A DC	5.0V AC @ 2.0A	6.6V AC @ 3.8A	135106	P-6013*	T22R05	P-2953*

*Add series resistor to reduce plate voltage.
Original Part #B142954-1.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
123	11kΩ CT	3.9Ω	650Ω CT	.5Ω	137001	A-3824	T22S56	A-2904#	#Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	INSTALLATION NOTES
124	FIELD PM	VC IMP. 3.9Ω	138762-5	ST-102† Mod. P12-S	12A6†	Original Part #C137058-C †Replace output transformer to match 6-8Ω voice coil.
125	CONE DIA. 11½"	VC DIA. 1"				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: MEISSNER PART No.	
126	AM Loop Ant.		0Ω	143893		
127	AM Ant.Coil	75Ω	2.3Ω	143267	14-1056	
128	FM Dipole Ant.		0Ω			
129	FM Ant. Coil		0Ω	143784		
130	SW " "	1Ω	1Ω	143076		
131	AM RF Coil	70Ω	7Ω	143402	14-1057	
132	SW RF Coil		0Ω	143085		
133	FM RF Coil		0Ω	143646		
134	AM Osc.Coil		8Ω	143945		
135	SW Osc.Coil		0Ω	143095		
136	FM "		0Ω	143305		
137A	AM 1st IF	6.2Ω	6.5Ω§	143090		§Includes both secondary windings
B	FM " "	.2Ω				
138A	AM 2nd IF	6.4Ω‡		143105		‡Includes both primary windings
B	FM " "		.4Ω			
139	Ratio Det.	.7Ω	.5Ω	143378		
140	RF Plate Choke		.6Ω	143752		
141	Osc. Plate Choke		.6Ω	143837		
142	Osc. Cath. Choke		7.5Ω	143373		
143	Fil. Choke		0Ω	143934		
144	" "		0Ω	143934		

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA CROSLEY PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
63	100	300	137727-25	1468-0001	5W5T1	MO.5-31	1FM-31	RF Coupling "
64	91	300	137727-20	1468-0001	5W5T1	MO.5-31	1FM-31	FM RF Coupling "
65	40	300	137727-73	1468-00004	5W5Q4	MO.5-44	1FM-44	" " " "
66	3.3	300	137398-6	1468-000005	5W5V5	MO.5-55	MS-55	RF Coupling "
67	56	200	137727-45	1468-00005	5W5Q5	MO.5-45	1FM-45	SW RF Coupling "
68	60	300	137727-76					Fixed Trimmer "
69	15	200	137727-43		5W5Q2		MS-415	SW RF Coupling "
70	164	500	137499-24					SW Fixed Padder-Mica "
71	1000	300	137727-8	1468-001	1W5D1	MO.3-21	1FM-21	Decoupling "
72	1000	300	137727-8	1468-001	1W5D1	MO.3-21	1FM-21	AVC Filter "
73	3.3	300	137398-5	1468-000005	5W5V5	MO.5-55	MS-55	RF Coupling "
74	47	300	137727-31	1468-00005	5W5Q5	MO.5-45	1FM-45	Fixed Trimmer "
75	33	300	143686-2	1468-00004	5W5Q3	MO.5-43	MS-43	" " "
76	120	300	137727-12	1468-0001	5W5T1	MO.5-31	1FM-31	RF Coupling "
77	180	500	137727-75					SW Fixed Padder "

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA CROSLEY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
78A	2.5 Meg	½	39368-19	D13-139X		Volume Control
B	Shaft		39370-2	E		Attach to 78A per instructions
79	500KΩ	½	39368-12			Treble Control & Switch
80	3 Meg.	½	39368-22			Bass Control

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA CROSLEY PART No.	IRC PART No.	IDENTIFICATION CODES
81	1.5 Meg.	½	39373-94	BTS-1.5 Meg.	Br.-Grn.-Grn. AVC Network
82	100KΩ	½	39373-74	BTS-100K	Br.-Blk.-Yl. " "
83	1 Meg.	½	39373-92	BTS-1 Meg.	Br.-Blk.-Grn. RF Grid
84	22KΩ	1	39373-170	BTA-22K	Red-Red-Or. RF Screen Dropping
85	68KΩ	½	39373-71	BTS-68K	Blue-Gray-Or. RF Screen Bleeder
86	1000Ω	½	39373-33	BTS-1000	Br.-Blk.-Red RF Decoupling
87	100KΩ	½	39373-74	BTS-100K	Br.-Blk.-Yl. AM Osc. Grid
88	6800Ω	1	39373-161	BTA-6800	Blue-Gray-Red AM Osc. Plate
89	68KΩ	½	39373-71	BTS-68K	Blue-Gray-Or. FM Osc. Grid
90	220Ω	½	39373-19		Red-Red-Br. Decoupling
91	220Ω	½	39373-19		Red-Red-Br. "
92	1 Meg.	½	39373-92	BTS-1 Meg.	Br.-Blk.-Grn. Mixer Grid
93	120KΩ	½	39373-75	BTS-120K	Br.-Red-Yl. Mixer Screen
94	2200Ω	½	39373-40	BTS-2200	Red-Red-Red Mixer Decoup.
95	1 Meg.	½	39373-92	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
96	39KΩ	½	39373-65	BTS-39K	Or.-White-Or. 1st IF Screen
97	2200Ω	½	39373-40	BTS-2200	Red-Red-Red 1st IF Decoupling
98	47KΩ	½	39373-67	BTS-47K	Yl.-Vi.-Or. Diode Filter
99	470KΩ	½	39373-87	BTS-470K	Yl.-Vi.-Yl. Diode Load
100	22KΩ	½	39373-60	BTS-22K	Red-Red-Or. 2nd IF Grid
101	47KΩ	½	39373-67	BTS-47K	Yl.-Vi.-Or. " " "
102	270Ω	½	39373-21		Red-Vi.-Br. 2nd IF Cathode
103	33KΩ	1	39373-174	BTA-33K	Or.-Or.-Or. 2nd IF Decoup.
104	39KΩ	½	39373-65	BTS-39K	Or.-White-Or. Bleeder
105	39KΩ	½	39373-65	BTS-39K	Or.-White-Or. De-emphasis
106	27KΩ	½	39373-62	BTS-27K	Red-Vi.-Or. Ratio Det. Diode Load
107	68KΩ	½	39373-71	BTS-68K	Blue-Gray-Or. Tone Compensation
108	33KΩ	½	39373-64	BTS-33K	Or.-Or.-Or. " "
109	10 Meg.	½	39373-107	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
110	220KΩ	½	39373-80	BTS-220K	Red-Red-Yl. AF Plate Load
111	10 Meg.	½	39373-107	BTS-10 Meg.	Br.-Blk.-Blue Phase Inverter Grid
112	220KΩ	½	39373-80	BTS-220K	Red-Red-Yl. Phase Inv. Plate Load
113	330KΩ	½	39373-84	BTS-330K	Or.-Or.-Yl. Output Grid
114	330KΩ	½	39373-84	BTS-330K	Or.-Or.-Yl. " "
115	100KΩ	½	39373-74	BTS-100K	Br.-Blk.-Yl. " "
116	220Ω	2	39373-239	BW-2-220	Red-Red-Br. Output Cathode
117	1 Meg.	½	39373-92	BTS-1 Meg.	Br.-Blk.-Grn. Bias
118	15Ω	½	39373-3	BW-½-15	Br.-Grn.-Blk. "
119	220Ω	½	39373-19	BW-½-220	Red-Red-Br. Decoupling
120	1000Ω	2	39373-253	BT-2-1000	Br.-Blk.-Red Filter
121A	700Ω	4		AB-750	"
B	400Ω	4	137021	AB-400	"

DATE 3/49 #495-6 SET #57-FOLDER #6

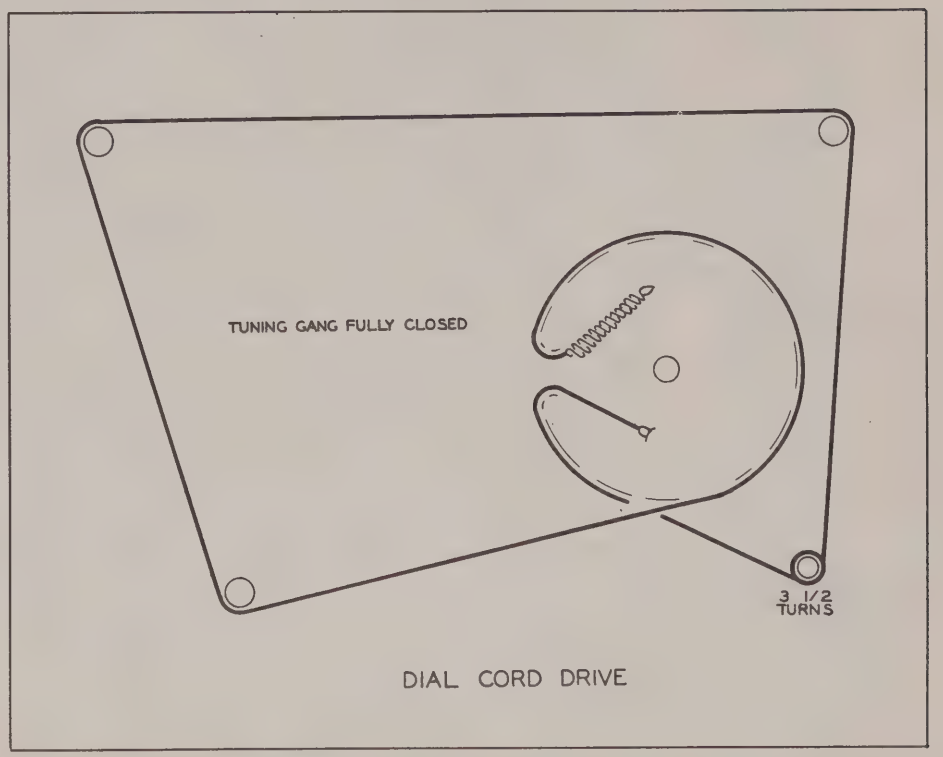
PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHT

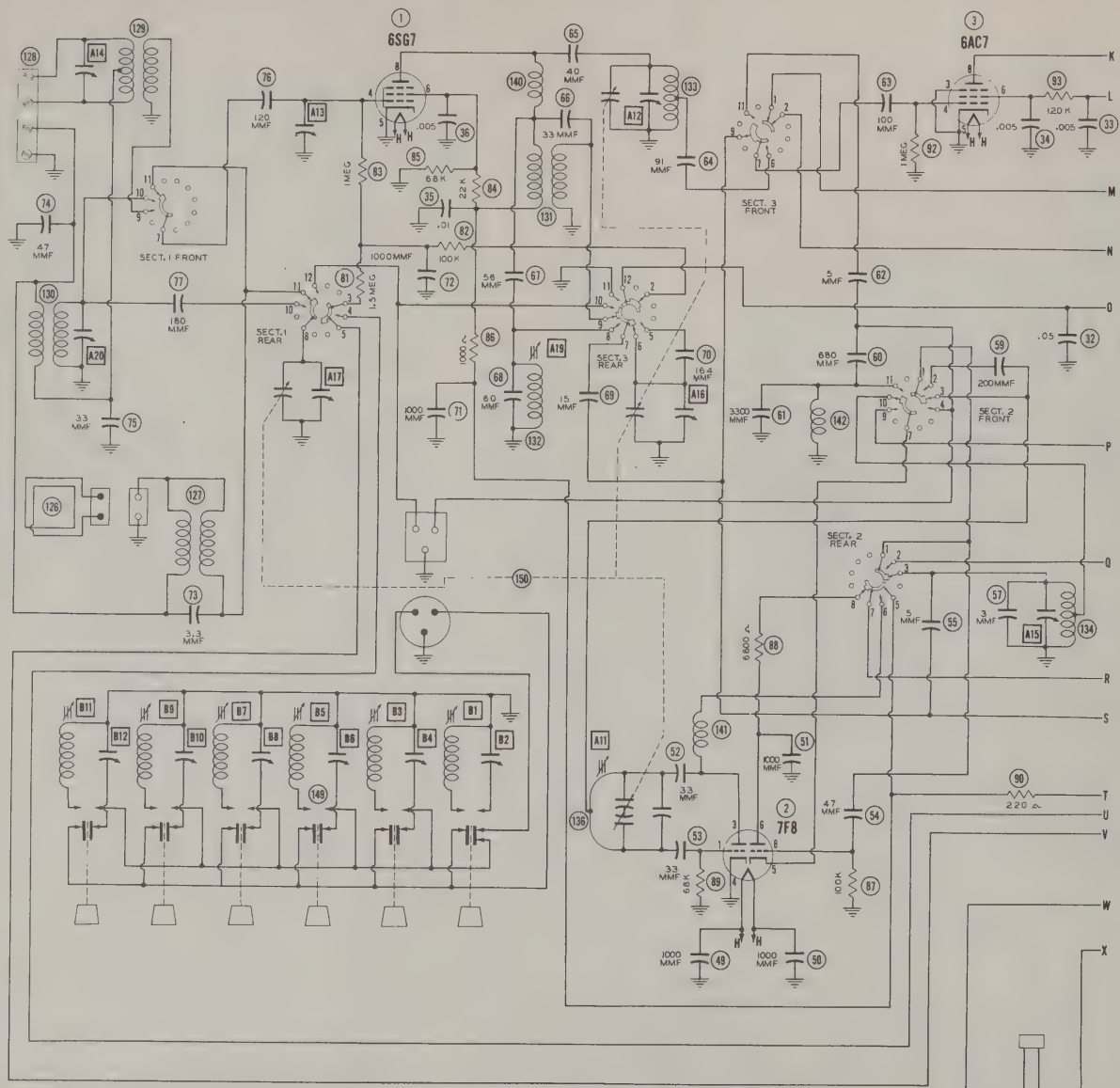
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA CROSLEY PART No.		INSTALLATION NOTES
145-147	Bayonet	6-8	0.15	Brown	43858		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	CROSLEY PART No.	NOTES
148	Switch	143097	Band-Phono
149	Pushbutton Assy.	143765	
150	Tuning Gang	142848	
A13	Trimmer	136327-43	FM Ant. Sec. Adj.
A15	"	143014	BC Osc. Adj.
A20	"	136327-36	SW Ant. Adj.
	Cabinet	143897	
	Dial Scale	143526	
	Knob	138576-6	Volume, Tone, Tuning
	"	143778	Bandswitch
	Dial Pointer	143769	



DIAL CORD DRIVE



VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.
RADIO-PHONO SWITCH IN RADIO POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SG7	0V	1.6VAC	0V	-.7VDC	0V	92VDC	0V	182VDC
2A	7F8	-4.2VDC	1.0VAC	-5.2VDC	0V	0V	102VDC	0V	5-14VDC
2B	7F8	4-4.7VAC	5.2VAC	182VDC	0V	0V	0V	0V	0V
3	6AC7	0V	6.0VAC	0V	-1VDC	0V	72VDC	0V	182VDC
4	6SG7	0V	6.2VAC	0V	-.8VDC	0V	80VDC	0V	182VDC
5	6SG7	0V	6.2VAC	0VDC	0V	9VDC	50VDC	0V	50VDC
6	6AL5	0V	6.4VAC	6.0VAC	0V	-.2VDC	0V	-.2VDC	
7	6SG7	0V	6.4VAC	0V	-.4VDC	0V	122VDC	0V	6.6VAC
8	6SG7	0V	6.4VAC	0V	0V	0V	122VDC	0V	6.6VAC
9	6V6GT	0V	6.0VAC	256VAC	248VDC	0V	0V	0V	15VAC
10	6V6GT	0V	6.0VAC	256VAC	248VDC	0V	0V	0V	15VAC
11	5Y3GT	0V	350VAC	1.1VAC	310VAC	0V	310VAC	0V	350VAC

‡TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SG7	0Ω	.1Ω	0Ω	2.5 Meg.	0Ω	40kΩ	0Ω	40kΩ
2A	7F8	68kΩ	.1Ω	Inf.	0Ω	0Ω	46kΩ	0Ω	100kΩ
2B	7F8	68kΩ	.1Ω	40kΩ	0Ω	Inf.	Inf.	0Ω	100kΩ
3	6AC7	0Ω	.1Ω	0Ω	1 Meg.	0Ω	175kΩ	0Ω	42kΩ
4	6SG7	0Ω	.1Ω	0Ω	1.1 Meg.	0Ω	80 kΩ	0Ω	42kΩ
5	6SG7	0Ω	.1Ω	270Ω	22kΩ	270Ω	30kΩ	0Ω	30kΩ
6	6AL5	0Ω	27kΩ	.1Ω	0Ω	Inf.	0Ω	Inf.	
7	6SG7	0Ω	11 Meg.	0Ω	550kΩ	0Ω	240kΩ	0Ω	.1Ω
8	6SG7	0Ω	11 Meg.	0Ω	0Ω	0Ω	240kΩ	0Ω	.1Ω
9	6V6GT	Inf.	.1Ω	40kΩ	40kΩ	450Ω	Inf.	0Ω	220Ω
10	6V6GT	Inf.	.1Ω	40kΩ	40kΩ	450Ω	1.2kΩ	0Ω	220Ω
11	5Y3GT	Inf.	40kΩ	140	2kΩ	6Ω	4kΩ	Inf.	40kΩ

‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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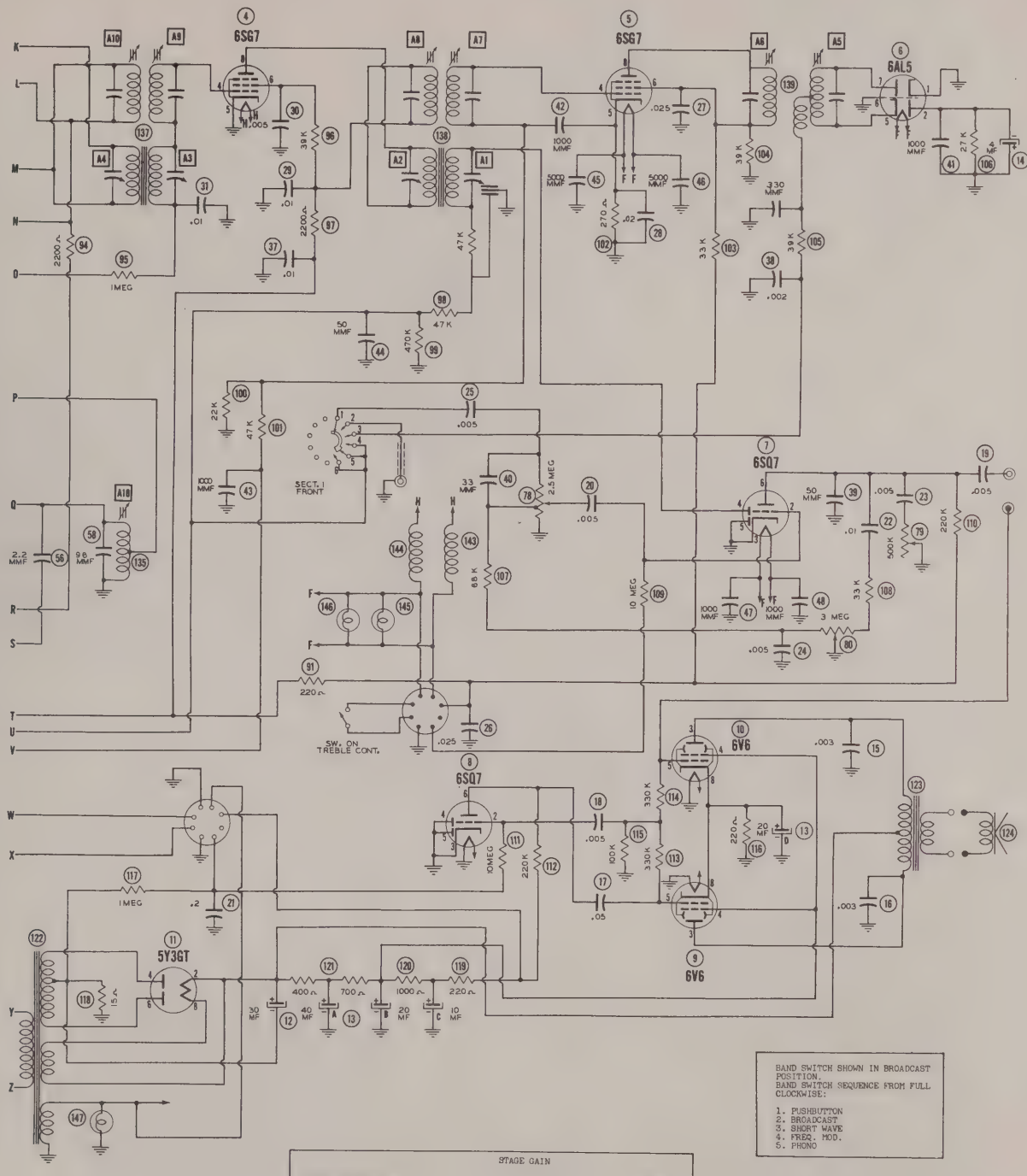

STAGE GAIN		
RF GRID TO CONV GRID	2X	600KC
CONV GAIN	150Ω IN OUT	600KC 455KC
IN IF TRANS.	1X	455KC
IF TUBE	250X	455KC
OUT IF TRANS.	1X	455KC
AUDIO	30X	400∿
OUTPUT	25X	400∿

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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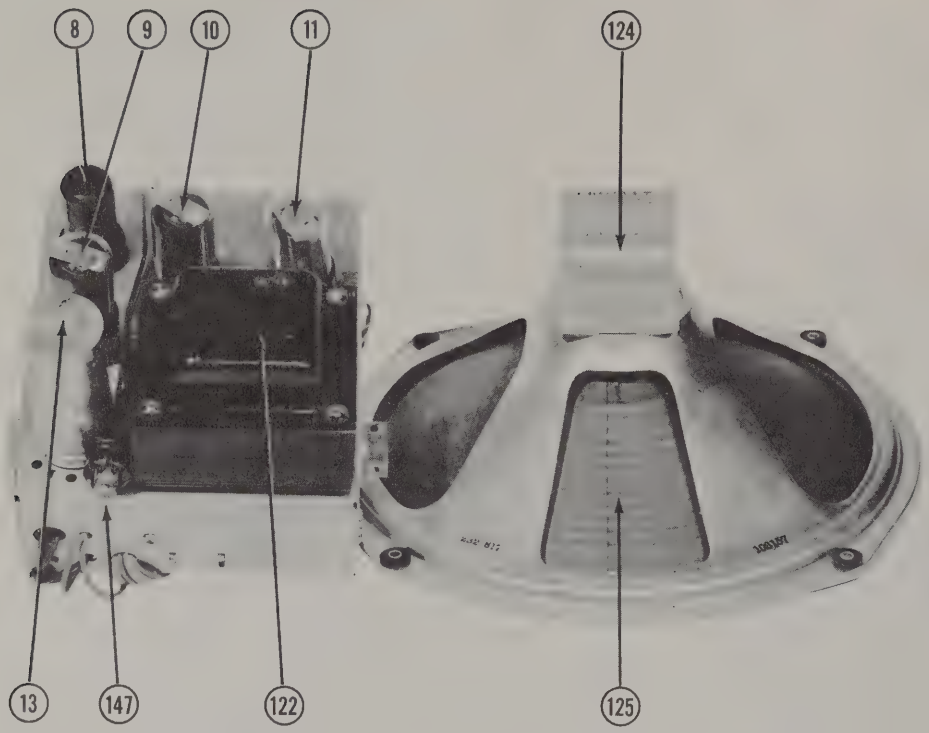
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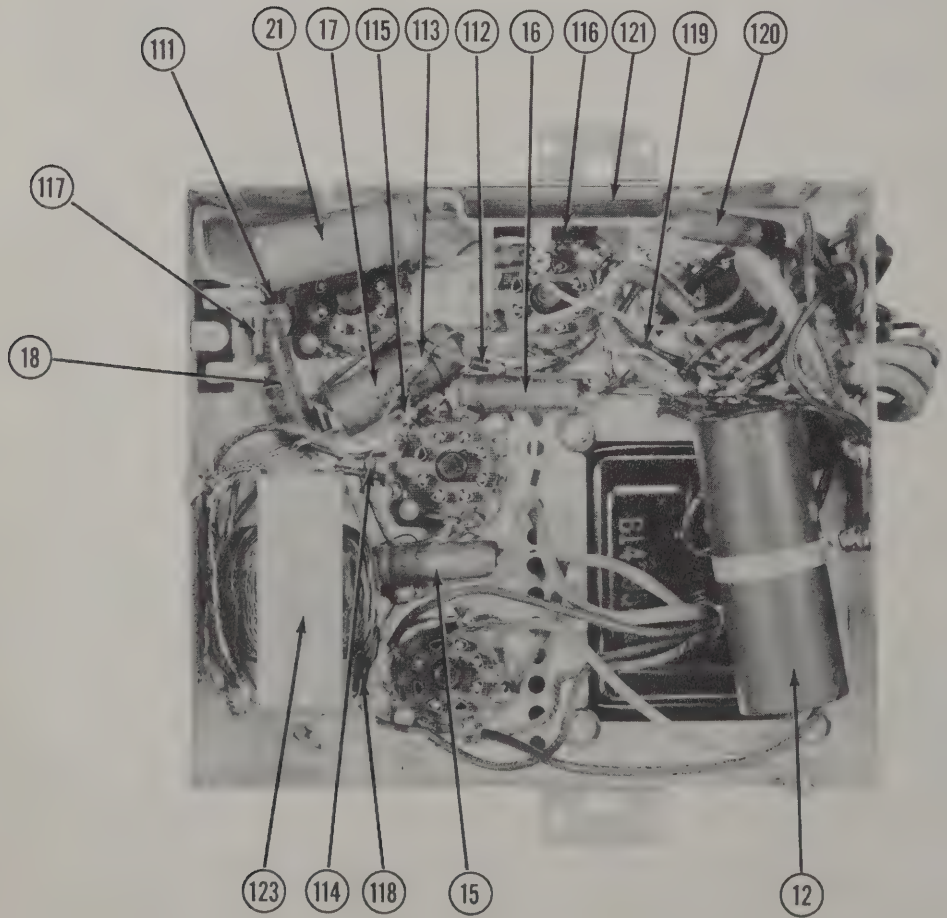
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ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer turn tuning capacitor fully closed and set pointer to left edge of clear section of dial.
Use insulated alignment screwdriver for all adjustments.

AM IF ALIGNMENT

Volume control should be at max. position, out. of sig. gen. should be no higher than necessary to obtain an output reading.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.01 MFD	High side to Pin 4 (grid) of 6SG7 1st IF Tube (4). Low side to chassis.	455KC	AM (1 position from fully clockwise)	Tuning cap. fully open.	Across voice coil	A1,A2	Adjust for maximum output.
2	.01 MFD	High side to rear AM stator of tuning cap. Low side to chassis.	"	"	"	"	A3,A4	" " " "

FM RATIO DETECTOR ALIGNMENT

Connect two 100KΩ resistors (within 5% of each other) from Point ◇ to chassis. The junction of these two resistors is Point Ⓑ.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
3	1000MMFD	High side to Pin 4 (grid) 2nd IF Tube (5). Low side to chassis.	10.7MC (Unmodulated)	FM (3 positions from fully clockwise)	Tuning cap. fully closed	DC probe to Point ◇. Common to Point Ⓑ. (See prealignment notes)	A5	Adjust for zero reading.
4	1000MMFD	"	"	"	"	DC probe to Point ◇. Common to chassis	A6	Adjust for maximum deflection.

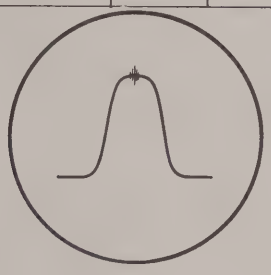

FIG. 1

FIG. 2

DISASSEMBLY INSTRUCTIONS

1. Remove five push-on type control knobs.
2. Disconnect phono motor plug and remove tuner power plug, phono pick-up plug and audio plug from tuner chassis.
3. Remove two locking keys from two lower chassis shock mounts and remove chassis by pulling down.
4. Remove four 1/4" hex head wood screws holding output chassis. Remove output chassis.
5. Remove four 1/4" hex type nuts holding speaker. Remove speaker.

PUSH BUTTON ADJUSTMENT

The frequency ranges of the push buttons from left to right are: 540 to 900KC, 590 to 1000KC, 680 to 1150KC, 750 to 1300KC, 880 to 1500KC and 1000 to 1620KC.

1. Turn receiver on and allow it to warm up for at least fifteen minutes.
2. Make up a list of stations, ranging from low frequency to high frequency, making sure that each station falls within the range of its pushbutton.
3. Adjust B1 counter-clockwise until it extends approximately 3/4 inch, Adjust B2 completely clockwise till moderately tight.
4. Turn band switch to "AM" and manually tune in first station desired to be set up.
5. Turn band switch to "Auto" and adjust B1 for same station for maximum volume.
6. Adjust B2 for maximum volume.
7. Check adjustment by turning band switch to "AM". There should be no change in tone.
8. Insert call letters of station in button cover.
9. To set up the remaining buttons follow the procedure outlined above.

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FM IF RF ALIGNMENT USING FM SIGNAL GENERATOR OSCILLOSCOPE & OUTPUT METER

In all steps where scope is used, use frequency modulated signal with 60 ∿ modulation and sweep as specified. If 60 ∿ sync. voltage is available from signal generator, connect it to horizontal input of scope. If it is not available from signal generator it may be obtained from AC power line. Some phase shift may be encountered resulting in a double trace pattern. If scope or signal generator has a phase control rotate it until a single trace pattern is obtained. If this control is not available or sync. voltage is taken from power line the same thing may be accomplished by connecting a capacitor of suitable value (.01 to .1 MFD) in series with sync. voltage input.

In all steps where scope is used, marker signal generator consists of AM signal generator with good stability and reliable calibration. Connect it to FM signal generator in series with a 10 MMFD capacitor. Turn up output until a satisfactory pip is visable.

In Step 11 a signal generator having .1 volt output and 30MC sweep, and scope having at least .05 volt per inch sensitivity must be used in order to obtain a pattern similar to Fig. 2. If such equipment is not available then the method in Steps 11 of Alternate FM-IF-RF Alignment Using AM Signal Generator and Output Meter must be used.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
5	1000MMFD	High side to Pin 4 (grid) of 6SG7 1st IF Tube (4). Low side to chassis.	10.7MC (Freq. Mod. 60∿ mod. 450 KC sweep)	FM (3 positions from fully clockwise)	Tuning cap. fully closed	Vertical input to Point (D). Ground to chassis.	A7,A8	Adjust for maximum amplitude and symmetry of pattern on either side of marker pip per Fig. 1.
6	1000MMFD	High side to rear FM stator of tuning cap. Low side to chassis.	"	"	"	"	A9,A10	"
						OUTPUT METER		
7	2 - 39Ω carbon res.	Each side in series with 39Ω to FM ant. terminals.	98MC (Freq. Mod. 400 ∿ mod. 45 KC sweep)	FM (3 positions from fully clockwise)	98MC	Across voice coil	A11	Adjust for maximum output.
8	"	"	104MC	"	Tune for maximum output.	"	A12	" " " "
9	"	"	92MC	"	"	"	FM RF Coil (132)	Adjust spacing of FM-RF coil slightly for maximum output.
10	"	Each side in series with 39Ω to FM ant. terminals. (Connect marker gen. in series with 10 MMFD to high side of FM sig. gen.)	98MC (Freq.Mod. 60 ∿ Mod. 30MC sweep. See prealignment notes)	"	Tuning cap. fully closed	Vertical input in series with 100K ohm resistor to Point (E). Ground to chassis.	A13, A14	Remove 7F8 tube from socket. Adjust A13 & A14 for maximum amp. and symmetry of pattemper Fig. 2. Check for band pass at 92, 98 and 104MC with marker sig. gen.

FM IF RF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5	1000MMFD	High side to Pin 4 (grid) of 6SG7 1st IF Tube (4). Low side to chassis.	10.7MC (Unmodulated)	FM	Tuning cap. fully closed	DC probe to Point (D). Common to chassis	A7,A8	Adjust for maximum deflection.
6	1000MMFD	High side to rear FM stator of tuning cap. Low side to chassis.	"	"	"	"	A9,A10	"
7	2 - 39Ω carbon res.	Each side in series with 39Ω to FM dipole terminals.	98MC (Unmodulated)	"	98MC	"	A11	"
8	"	"	104MC	"	Tune for maximum output.	"	A12	Rock tuning cap. and adjust for maximum deflection.
9	"	"	92MC	"	"	"	FM RF Coil (132)	Adjust spacing of FM-RF coil slightly for maximum deflection.
10	"	"	98MC	"	98MC	"	A13, A14	Shunt primary of FM Ant. Coil with 10Ω carbon resistor and adjust A13 for maximum output. Transfer shunt to secondary and adjust A14 for maximum output. Remove shunt.

AM RF ALIGNMENT

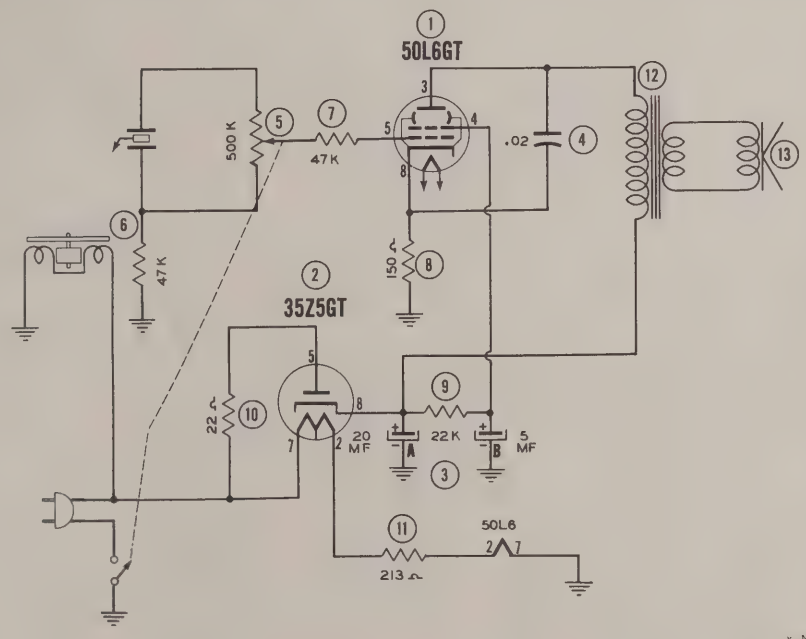
AM-RF Alignment must not be attempted unless loop is connected or a loop dummy is substituted for it. Dummy antenna consists of 19.1 microhenry RF choke shunted by a 66 MMFD cap. connected across loop terminals.

Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
11	200MMFD	High side to ext. AM ant. terminal. Low side to chassis. If loop is not connected, a loop dummy must be shorted across loop terminals. (See prealignment notes)	1400KC	AM (1 position from fully clockwise)	1400KC	Across voice coil	A15	Adjust for maximum output
12	200MMFD	"	"	"	Tune for maximum output.	"	A16, A17	" " " "
13	400Ω carbon res.	High side to either FM dipole terminal. Low side to chassis.	11MC	SW (center position)	11MC	"	A18	" " " "
14	"	"	"	"	Tune for maximum output.	"	A19, A20	Rock tuning cap. and adjust for maximum output.

GENERAL ELECTRIC MODEL 186-4

TRADE NAME	General Electric, Model 186-4
MANUFACTURER	General Electric Corp., Electronics Dept., Electronics Park, Syracuse, N. Y.
TYPE SET	AC Operated Phono Player with 2 Tube Amplifier.
TUBES (TWO)	Types 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC RATING .212 Amp. @ 117 Volts AC



Pin No.	50L6GT Volt.	Res.
1	0V	Inf.
2	50VAC	50Ω
3	123VDC	*270Ω
4	93VDC	*22K
5	0V	93K
6	0V	0Ω
7	0V	0Ω
8	6.1VDC	143

Pin No.	35Z5GT Volt.	Res.
1	0V	Inf.
2	85VAC	260Ω
3	90VAC	265Ω
4	0V	Inf.
5	116VAC	320Ω
6	117VAC	300Ω
7	117VAC	300Ω
8	135VDC	700K

* MEASURED FROM PIN 8 OF 35Z5GT

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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495-7

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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DATE 3/49-#495-7 SET #57-FOLDER #7

GENERAL ELECTRIC
MODEL 186-4

GENERAL ELECTRIC
MODEL 186-4

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: GEN. ELEC. PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Power Output	50L6GT	50L6GT	7AC	
2	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: GEN. ELEC. PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
3A	20	150		PRSA-150/8-16	EDL2115	DSB-2X20 150	TA-122	Filter - Red
B	5	150						Filter - Blue
4	.02	600		684-02	GT6S2	ST-6-02	TC-12	Output Plate Bypass

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GEN.ELEC. PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
5A	500KΩ	½	SRC-097	D11-133	AM-58-S	Volume Control
B	Shaft		Not Req.	E	KSS-3	Attach to 5A per Instructions.
C	Switch		" "	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GEN. ELEC. PART No.	IRC PART No.	IDENTIFICATION CODES	
6	47KΩ	½		BTS-47K	Yl.-Vi.-Or.	Pickup Isolation
7	47KΩ	½		BTS-47K	Yl.-Vi.-Or.	AF Grid
8	150Ω	½		BW-½-150	Br.-Grn.-Br.	AF Cathode
9	22KΩ	½		BTS-22K	Red-Red-Or.	Filter
10	22Ω	1			Red-Red-Blk.	Rectifier Ballast
11	213Ω	5		ABA-250#		Line Dropping

Set slider at 213Ω from one end.

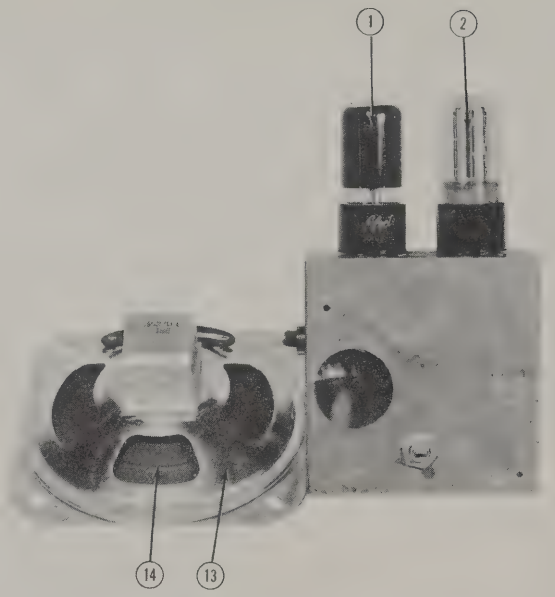
TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: GEN. ELEC. PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
12	2100Ω	3.2Ω	270Ω	.8Ω	ST0-008	A-3876*	T22S45*	A-2928*	* Drill new mounting holes.

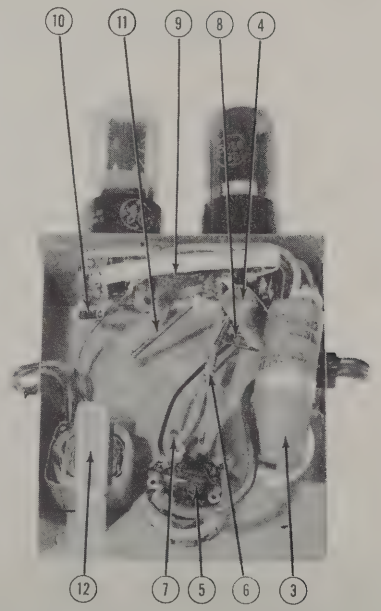
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: GEN. ELEC. PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	VC IMP.		ST-108		
13	PM	3.2Ω	SOP-011	Mod. P6-X	52A1	
	CONE DIA.	VC DIA.				
14	5-3/16"	9/16"				

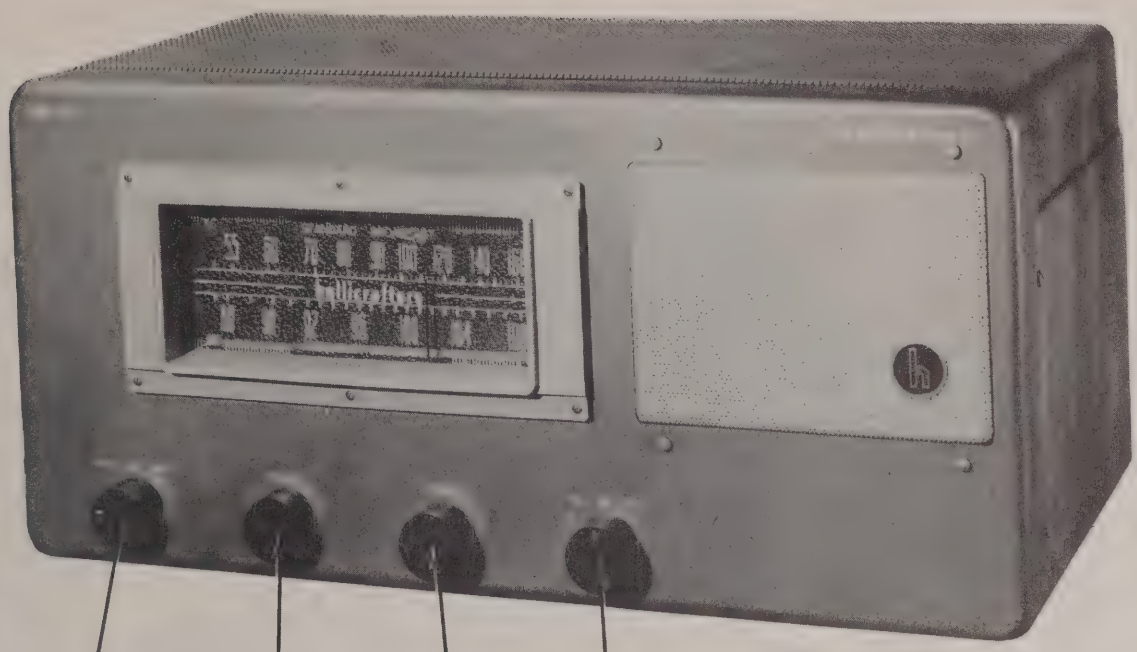
CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



HALLICRAFTERS
MODEL S-58



HALLICRAFTERS
MODEL S-58

TRADE NAME	Hallicrafters, Model S-58
MANUFACTURER	Hallicrafters Co., 5th & Kostner Avenues, Chicago 24, Illinois.
TYPE SET	AC-DC Operated AM-FM Superheterodyne Receiver
TUBES (SEVEN)	Types 12BE6 Converter, 6BJ6 1st IF Amp., 6BJ6 FM 2nd IF Amp., 12AL5 FM Detector, 12SQ7 AM Det-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
RATING	.25 Amp., @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1600KC. FREQ. MOD. 88-108MC.

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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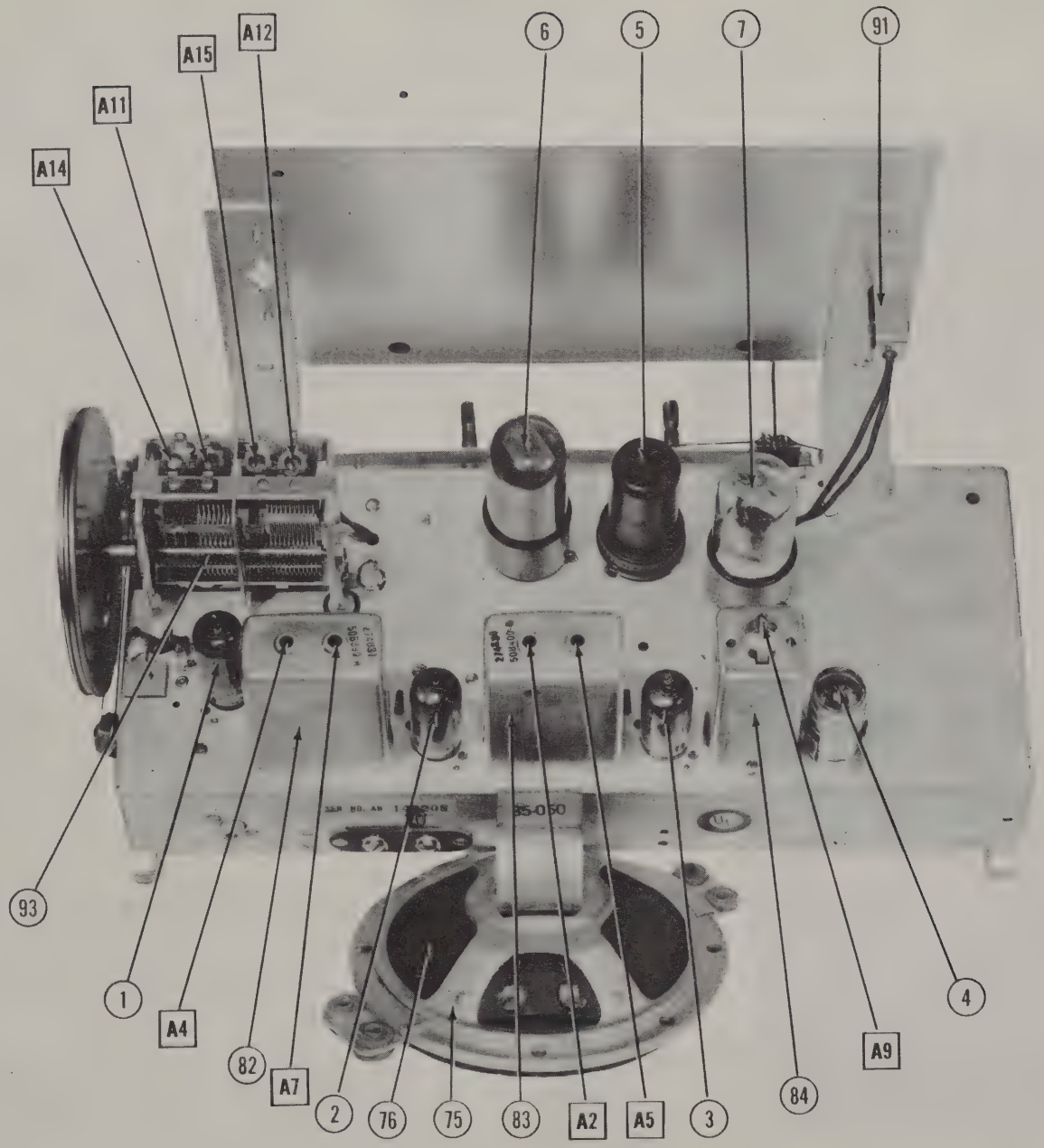
DATE 3/49-495-8 SET #57 FOLDER #8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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: HALLICRAFTERS PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12BE6	12BE6	7CH	
2	1st IF Amp.	6BJ6	6BJ6	7CM	
3	FM 2nd IF Amp.	6BJ6	6BJ6	7CM	
4	FM Detector	12AL5	12AL5		
5	AM Det.-AVC-AF	12SQ7	12SQ7	8Q	
6	Power Output	35L6GT	35L6GT	7AC	
7	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: HALLICRAFTERS PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
8A	40	150	45B130	PRSA150/40-40	EZ44315C	DSB-2x40-150	TA-440	Filter-Red
B	40	150		PRS150/20		M-20-150	UT-201	" - "
C	20	150						" -Blue
9	10	25	45A121	PRS25/10	BR102A	M-10-25	TA-10	Cathode Bypass
10	10	25	45A121	PRS25/10	BR102A	M-10-25	TA-10	Stabilizing Cap.
11	.01	600	46aR503J	684-01	GT6S1	MFH-6-01	TC-11	Line Filter*
12	.01	600	46AZ103J	684-01	GT6S1	ST-6-01	TC-11	Audio Coupling
13	.01	600	46AZ103J	684-01	GT6S1	ST-6-01	TC-11	" "
14	.004	600	46AZ402J	684-004	GT6D4	ST-6-004	TC-24	Tone Compensation
15	.1	200	46AU104J	484-.1	GT2P1	ST-2-1	TC-1	Audio Coupling
16	.05	600	46AY503J	684-05	GT6S5	ST-6-05	72P1	Line Isolation
17	.01	600	46AZ103J	684-01	GT6S1	ST-6-01	72P1	" "
18	220	500	CM20A221M	1468-0002	5W5T2	MO.5-32	TC-11	Tone Compensation
19	470	500	CM20A471M	1468-0005	5W5T5	MO.5-35	1FM-32	Det. Diode Load Cap.
20	2000	500	47B20A202M5	1467-002	1W5D2	MW.5-22	1FM-35	De-emphasis -Cer.
21	5000	500	47A168	1467-005	1W5D5	MW.5-25	1FM-22	Cathode Bypass "
22	1000	500	47B20A102N5	1468-001	1W5D1	MW.5-21	1FM-21	RF Byp. Power Supply "
23	5000	500	47A168	1468-005	1W5D5	MW.5-25	1FM-25	2nd IF Plate Decoup. "
24	1000	500	47B20A102N5	1468-001	1W5D1	MW.5-21	1FM-21	Filament Bypass "
25	470	500	CM20A471M	1468-0005	5W5T5	MO.5-35	1FM-35	RF Diode Filter
26	470	500	CM20A471M	1468-0005	5W5T5	MO.5-35	1FM-35	AVC Filter
27	5000	500	47A168	1467-005	1W5D5	MW.5-25	1FM-25	1st IF Decoup. "
28	5000	500	47A168	1467-005	1W5D5	MW.5-25	1FM-25	Cathode Bypass "
29	1000	500	47B20A102N5	1468-001	1W5D1	MW.5-21	1FM-21	Filament Bypass "
30	1000	500	47B20A102N5	1468-001	1W5D1	MW.5-21	1FM-21	" " "
31	5000	500	47A168	1467-005	1W5D5	MW.5-25	1FM-25	AVC Filter "
32	5000	500	47A168	1467-005	1W5D5	MW.5-25	1FM-25	Conv. Decoup. "
33	5000	500	47A168	1467-005	1W5D5	MW.5-25	1FM-25	" " "
34	220	500	48C203	1468-0002	5W5T2	MO.5-32	1FM-32	Osc. Plate Bypass
35	47	500	CC21UK470K	1468-00005	5W5Q5	MO.5-45	1FM-45	Osc. Grid Cap. "
36	51	500	CC21UK510J	1469-00005	5R5Q5	MOS.5-45	MS-45	Fixed Padder "
37	5	500	CC21UK050K	1469-000005	5R5V5	MOS.5-55	MS-55	Fixed Trimmer "
38	1000	500	47B20A102N5	1468-001	1W5D1	MW.5-21	1FM-21	RF Bypass "
39	100	500	CC26UK101K	1468-0001	5W5T1	MO.5-31	1FM-31	RF Coupling "
40	100	500	CC26UK101K	1468-0001	5W5T1	MO.5-31	1FM-31	" " "
41	220	500	CM20A221M					Fixed Trimmer
42	5	500	47A160-6	1469-000005	5R5V5	MOS.5-55	MS-55	" " "
43	47	500	CM20A470M	1468-00005	5W5Q5	MO.5-45	1FM-45	Dipole Isolation "
44	5000	500	47A168	1467-005	1W5D5	MW.5-25	1FM-25	Output Plate Byp. "

* Some Models use .05 MFD in this application

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: HALLICRAFTERS PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
45A	2 Meg.	½	25B624	D13-139	AM-66-Z	Volume Control
B	Shaft		Not Req.	E	KSS-3	Attach to 45A per instructions
46A	500KΩ	½	25B758	D13-133	AM-60-Z	Tone Control
B	Shaft		Not Req.	E	KSS-3	Attach to 46A per instructions
C	Switch		" "	41	SW-A	" " " " "

PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: HALLICRAFTERS PART No.	REPLACEMENT DATA:	INSTALLATION NOTES
91	Bayonet	6-8	0.15	Brown	39A084		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	HALLICRAFTERS PART No.	NOTES
92	Switch	60B328	Band-Phono
93	2 Gang Var. Cap.	48C203	(30-477MMF, 36-202MMF)
	Dial Glass	22B205	Clear
	Dial Scale	22C212	Glass
	Dial Pointer	82A152	
	Knob	15B142-1	On-Off-Tone, Band-Phono
	"	15B067-3	Volume, Tuning

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	HALLICRAFTERS PART No.	IRC PART No.	
47	10Ω	½	RC20AE100K		Br.-Blk.-Blk. Parasitic Suppressor
48	10Ω	½	RC20AE100K		Br.-Blk.-Blk. " "
49	10Ω	½	RC20AE100K		Br.-Blk.-Blk. " "
50	22KΩ	½	RC20AE223K	BTS-22K	Red-Red-Or. Osc. Grid
51	1000Ω	½	RC20AE102M	BTS-1000	Br.-Blk.-Red Conv. Plate Decoupling
52	330Ω	½	RC20AE331M		Or.-Or.-Br. Conv. Screen Decoupling
53	2.2 Meg.	½	RC20AE225M	BTS-2.2 Meg.	Red-Red-Grn. Conv. Grid
54	1 Meg.	½	RC20AE105M	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
55	27Ω	½	RC20AE270K		Red-Vi.-Blk. 1st IF Cathode
56	68Ω	½	RC20AE680K		Blue-Gray-Blk. 1st IF Cathode
57	330Ω	½	RC20AE331M		Or.-Or.-Br. 1st IF Decoup.
58	47KΩ	½	RC20AE473M	BTS-47K	Yl.-Vi.-Or. Diode Filter
59	330KΩ	½	RC20AE334M	BTS-330K	Or.-Or.-Yl. Diode Load
60	12Ω	½	RC20AE120K		Br.-Red-Blk. 2nd IF Cathode
61	68Ω	½	RC20AE680K		Blue-Gray-Blk. 2nd IF Cathode
62	330Ω	½	RC20AE331M		Or.-Or.-Br. 2nd IF Decoup.
63	47KΩ	½	RC20AE473M	BTS-47K	Yl.-Vi.-Or. De-emphasis
64	47KΩ	½	RC20AE473M	BTS-47K	Yl.-Vi.-Or. Tone Compensation
65	6800Ω	½	RC20AE682K	BTS-6800	Blue-Gray-Red Ratio Det. Diode Load
66	6800Ω	½	RC20AE682K	BTS-6800	Blue-Gray-Red " " " "
67	47KΩ	½	RC20AE473M	BTS-47K	Yl.-Vi.-Or. Series Phono
68	5.6 Meg.	½	RC20AE565M	BTS-5.6 Meg.	Grn.-Blue-Grn. AF Grid
69	470KΩ	½	RC20AE474M	BTS-470K	Yl.-Vi.-Yl. AF Plate Load
70	330KΩ	½	RC20AE334M	BTS-330K	Or.-Or.-Yl. AF Plate Decoup.
71	150Ω	½	RC20AE151K	BW-½-150	Br.-Grn.-Br. Output Cathode
72	560Ω	1	RC30AE561K	BTA-560	Grn.-Blue-Br. Filter
73	220Ω	1	RC30AE221M	BW-1-220	Red-Red-Br. "

TRANSFORMER (OUTPUT)

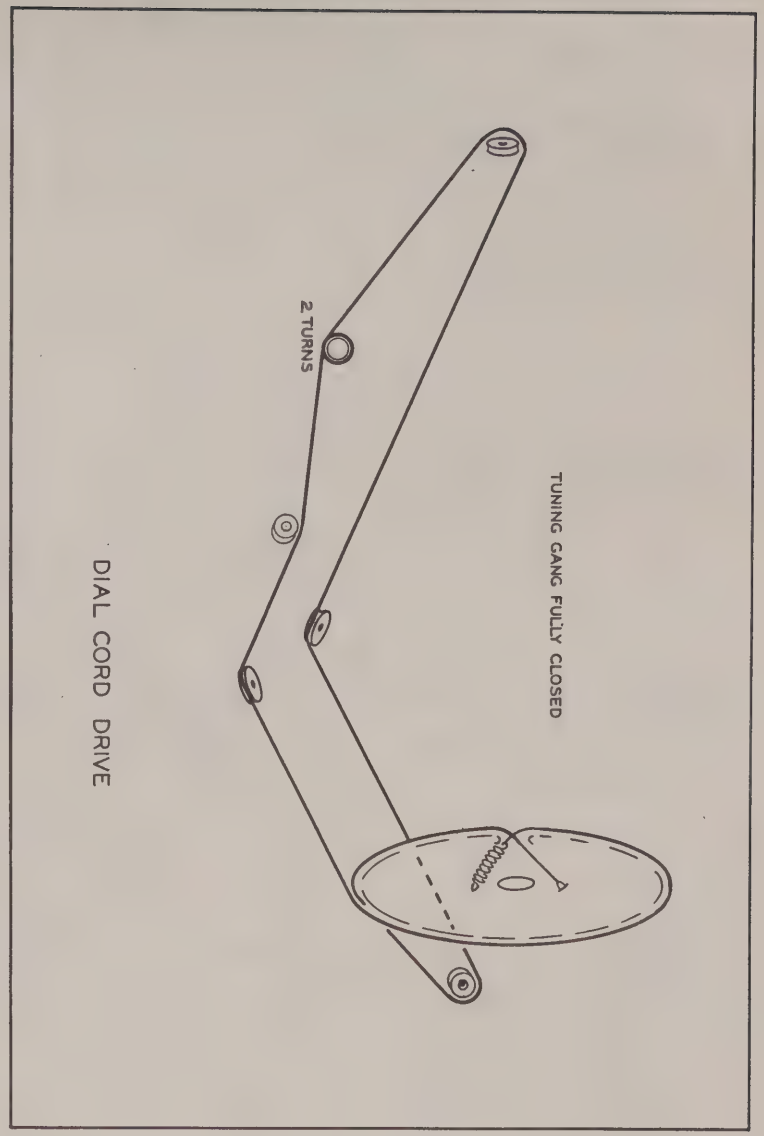
ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		HALLICRAFTER	STANCOR	THORDAR'N	MERIT	
	PRI.	SEC.	PRI.	SEC.	PART No.	PART No.	PART No.	PART No.	
74	2200Ω	3.2Ω	340Ω	.7Ω	55B111A	A-3849	T22S87	A-2902	

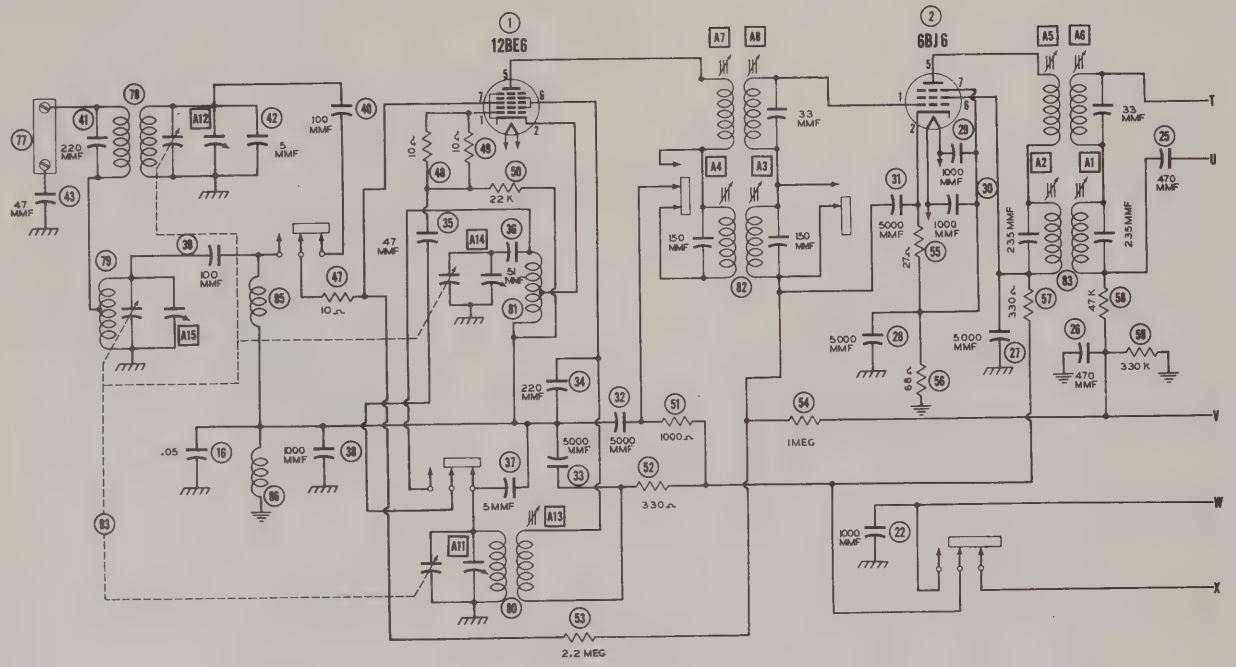
SPEAKER

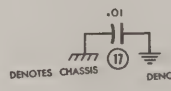
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			HALLICRAFTERS PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	VC IMP.		ST-105†		†Fabricate new mounting bracket.
75	PM	3.2Ω	85-050	Mod. P5-X	5A15†	
	CONE DIA.	VC DIA.				
76	4-3/4"	9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	HALLICRAFTERS PART No.	MEISSNER PART No.	
77	FM Dipole					
78	AM Ant.Coil	26Ω	6Ω	51B1064		
79	FM " "		0Ω	51A1061		
80	AM Osc. "	1Ω	7Ω	51B1063		
81	FM " "		0Ω	151A1062		
82A	AM 1st IF	12Ω	12Ω	50B399		
B	FM 1st IF	.8Ω	.5Ω	50B399		
83A	AM 2nd IF	8.5Ω	9Ω	50B400		
b	FM " "	1Ω	.5Ω	50B400		
84	Ratio Det.	1.5Ω	0Ω	50B401		
85	Isol. Choke		.5Ω	53B153		
86	RF Cath.Chk.		.5Ω	53B153		
87	Fil. Choke		.5Ω	53B153		
88	" "		.5Ω	53B153		
89	" "		.5Ω	53B153		
90	" "		.5Ω	53B153		







VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1A	12BE6	§-8.7VDC	0V	40VAC	50VAC	95VDC	95VDC	0V	
†1B	12BE6	§-.1VDC	0V	40VAC	50VAC	78VDC	85VDC	0V	
2	6BJ6	-.1VDC	.8VDC	40VAC	33VAC	95VDC	95VDC	.6VDC	
3	6BJ6	0V	.7VDC	33VAC	26VAC	85VDC	85VDC	.6VDC	
4	12AL5	-.1VDC	.1VDC	26VAC	13VAC	3VDC	0V	-.3VDC	
5	12SV7	0V		0V	0V	0V	43VDC	0V	12VAC
6	35L6GT	0V	90VAC	97VDC	98VDC	0V	70VDC	50VAC	5.9VDC
7	35Z5GT	110VDC	117VAC	111VAC	0V	111VAC	0V	90VAC	125VDC

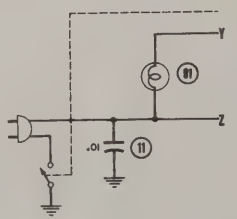
§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12BE6	22KΩ	.2Ω	40Ω	52Ω	250KΩ	250KΩ	3.5Meg.	
†1B	12BE6	22KΩ	.2Ω	40Ω	52Ω	250KΩ	250KΩ	10Ω	
2	6BJ6	1.3Meg.	95Ω	40Ω	34Ω	250KΩ	250KΩ	68Ω	
3	6BJ6	380KΩ	80Ω	34Ω	26Ω	250KΩ	250KΩ	68Ω	
4	12AL5	2.1Meg.	2.1Meg	26Ω	13Ω	6.8KΩ	Inf.	6.8KΩ	
5	12SV7	Inf.	5.6Meg.	0Ω	0Ω	0Ω	1.1Meg.	0Ω	13Ω
6	35L6GT	Inf.	90Ω	250KΩ	250KΩ	500KΩ	650KΩ	52Ω	150Ω
7	35Z5GT	250KΩ	118Ω	105Ω	Inf.	105KΩ	Inf.	90Ω	250KΩ

† VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS



1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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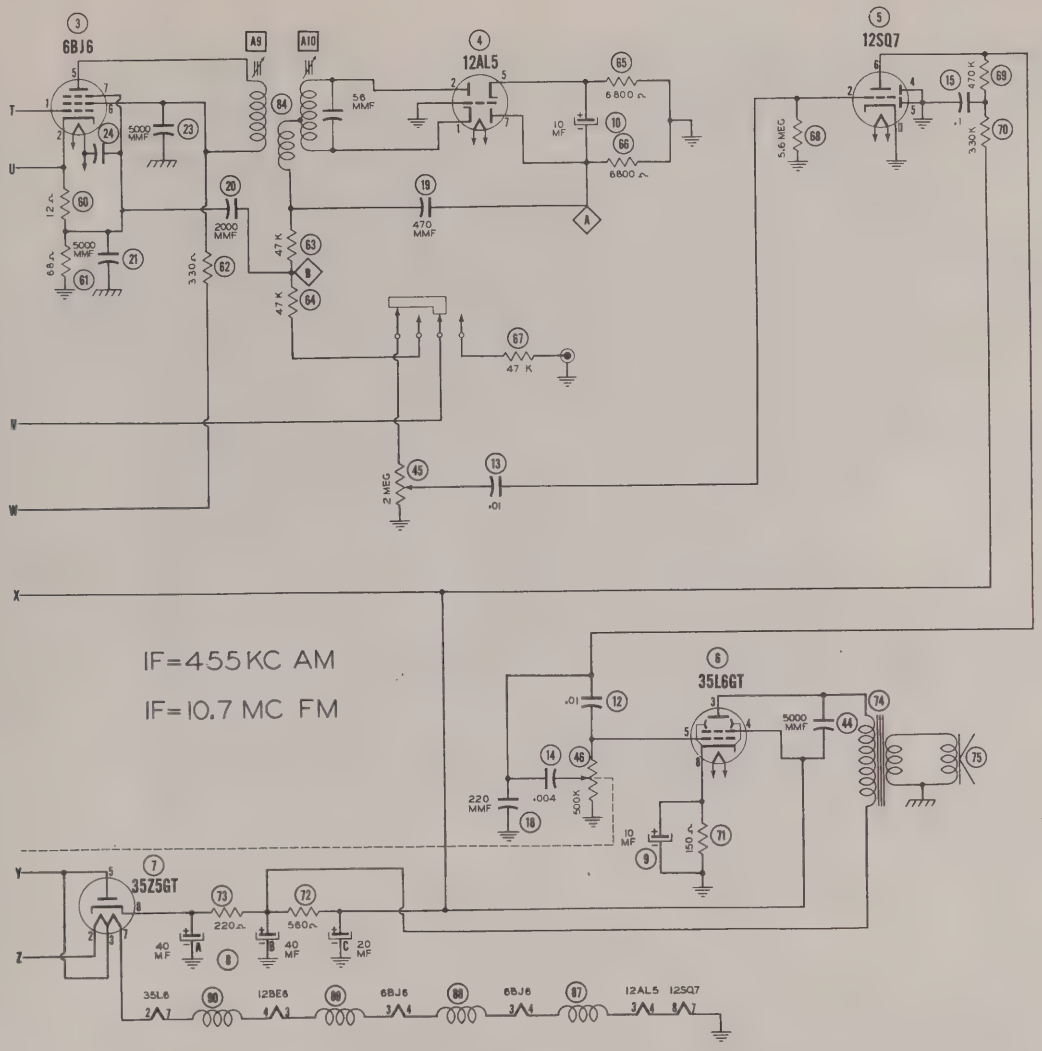

	STAGE GAIN	
ANT-CONV GRID	10X	600KC
CONV GAIN	65X	IN 600KC OUT 455KC
IN IF TRANS.	1X	455KC
IF TUBE	80X	455KC
OUT IF TRANS	.6X	455KC
AUDIO	35X	400∿
OUTPUT	15X	400∿

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ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low frequency end of dial.
Use isolation transformer if available. If not connect a .1 MFD cap. in series with low side of signal generator and B-.

AM IF ALIGNMENT

Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.01 MFD	High side to large AM stator section of tuning cap. Low side to chassis.	455KC	Center position	1000KC	Across voice coil	A1,A2, A3,A4	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD to reduce hum modulation.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

To find the center IF Frequency detune the signal generator on either side of 10.7MC and note the signal generator frequency at which the VTVM reading is one-half the maximum. Attenuate output of signal generator to obtain a maximum VTVM reading of 2 volts. Set signal generator to mid-point frequency of the two readings.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
2	.01 MFD	High side to small FM stator section of tuning cap. Low side to chassis.	10.7MC (Unmodulated)	Fully counter clockwise	100MC	DC probe in series with 500KΩ resistor to Point (A).	A5,A6, A7,A8	Adjust for maximum deflection. Find center of IF Frequency per prealignment instructions and use this setting for Steps 3 & 4.
3	.01 MFD	"	Center IF Freq.	"	"	"	A9	Adjust for maximum deflection.
4	.01 MFD	"	"	"	"	DC probe in series with 500KΩ resistor to Point (B).	A10	Adjust for zero deflection. Continue with RF Alignment in Step 5.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
2	.01 MFD	High side to Pin 1 (grid) of 6BJ6 1st IF Tube (2). Low side to B-.	10.7MC (Freq. Mod.)	FM	100MC	Vertical input to Point (A). Ground to B-.	A5,A6, A9	Disconnect 10 MFD cap. (10) from Point (A). Adjust A5, A6 & A9 for maximum amplitude, symmetry and coincidence of pattern per Fig. 1.
3	.01 MFD	High side to small FM stator of tuning cap. Low side to B-.	"	"	"	"	A7,A8	Adjust for maximum amplitude, symmetry and coincidence of pattern per Fig. 1. Reconnect cap. (10) to Point (A).
4	.01 MFD	"	"	"	"	Vertical input to Point (B). Common to B-.	A10	Adjust for crossover of diagonal lines occurring at scope horizontal sweep line per Fig. 2. Continue with RF Alignment in Step 5.

AM RF ALIGNMENT

Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Standard RMA dummy antenna consists of a 200 MMFD cap. in series with a 20 Microhenry RF choke. The choke being shunted by a 400 MMFD capacitor in series with a 400Ω carbon resistor.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
5	RMA Dummy (See Prealignment instructions)	High side to left hand ant. terminal. Low side to B-.	1600KC	AM	1600KC	Across voice coil	A11	Adjust for maximum output
6	"	"	"	"	Tune for maximum output.	"	A12	" " " "
7	"	"	600KC	"	"	"	A12	Rock tuning cap. and adjust for maximum output. Repeat Steps 5, 6 & 7 until no further improvement can be made.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8	300Ω carbon res.	High side to left hand ant. terminal. Low side to B-.	108MC (Unmodulated)	FM	108MC	DC probe to Point (A). Common to B-.	A13	Adjust for maximum deflection.
9	"	"	"	"	Tune for maximum deflection.	"	A14	Rock tuning cap. and adjust for maximum deflection.

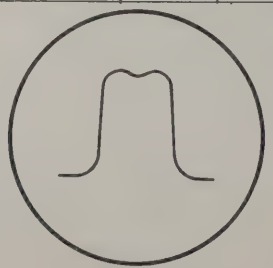


FIG. 1

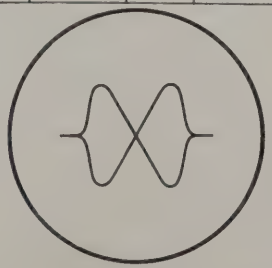
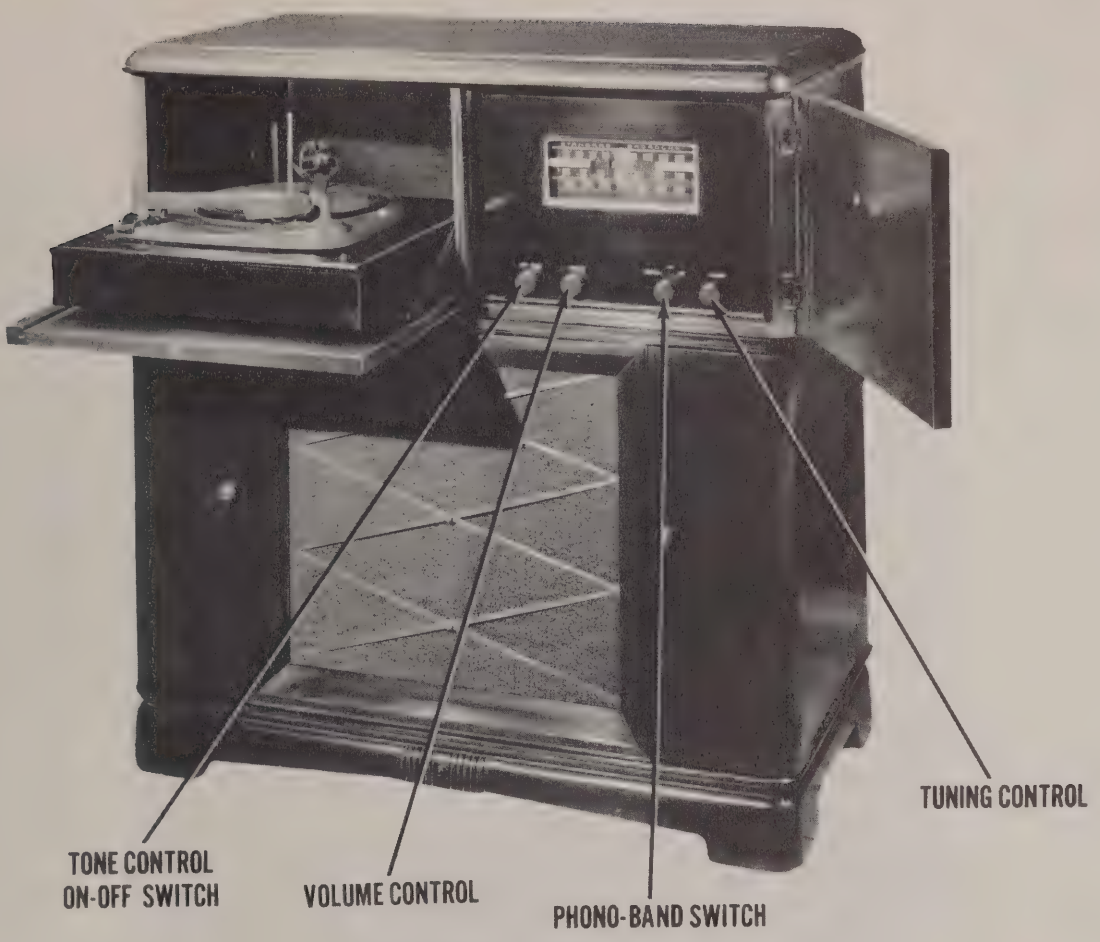


FIG. 2

KNIGHT
MODEL 11D302



KNIGHT
MODEL 11D302

KNIGHT MODEL 11D302

TRADE NAME	Knignt, Model 11D302
SUPPLIER	Allied Radio Corp., 833 W. Jackson Blvd.,Chicago 7, Ill.
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Antenna
TUBES (ELEVEN)	Types, 6BA6 FM RF Amp., 7Q7 AM Converter, 7F8 FM Converter, 7AH7 IF Amp., 6SH7 FM 2nd IF Amp., 7A6 FM Ratio Det., 6SQ7 Det.-AVC-AF, 7F7 2nd AF Phase Inv., (2) 7C5 Power Output, 5Y3GT Rectifier.
POWER SUPPLY	105-125 Volts AC
RATING	.8 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1700KC FREQ. MOD. 88 - 108MC

DISASSEMBLY INSTRUCTIONS

1. Disconnect phono motor plug and remove phono pick-up plug from rear of chassis.
2. Remove FM antenna leads from terminal strip at rear of chassis. Remove loop ant. plug from rear of chassis.
3. Remove speaker plug from rear of chassis.
4. Remove three hex nuts holding speaker. Remove speaker.
5. Remove three push-on type control knobs and one set screw type control knob.
6. Remove screw holding indicator light at bottom of cabinet.
7. Remove four metal screws holding chassis in cabinet. Remove chassis.

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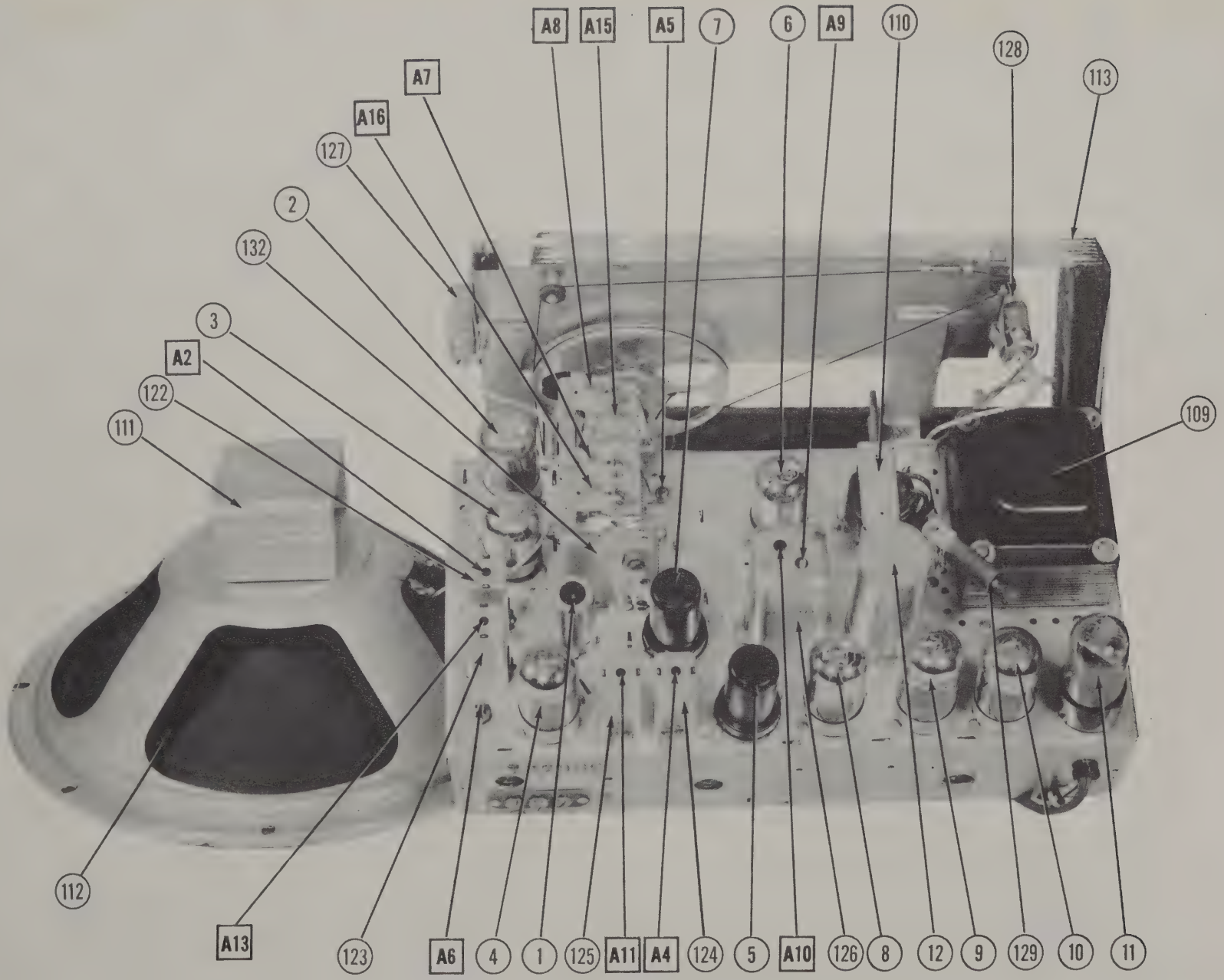
DATE 3/49 #495-9 SET #57-FOLDER #9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11

KNIGHT
MODEL 11D302

PAGE 3

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: KNIGHT PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	FM RF Amp.	6BA6	6BA6	7BK	
2	AM Converter	7Q7	7Q7	8AL	
3	FM Converter	7F8	7F8	8BW	
4	IF Amp.	7AH7	7AH7		
5	FM 2nd IF	6SH7	6SH7	8BK	
6	FM Ratio Det.	7A6	7A6	7AJ	
7	Det.-AVC-AF	6SQ7	6SQ7	8Q	
8	2nd Audio Phase Inv.	7F7	7F7	8AC	
9	Power Output	7C5	7C5	6AA	
10	" "	7C5	7C5	6AA	
11	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: KNIGHT PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
12A	40	450		AF88J	UP4445	DY-2x40-450	EL-240	▲ Filter
B	40	450						▲ "
13	8	450		PRS450/8	BR845	M-8-450	UT-8	"
14	4	450		PRS450/4	BR445	M-4-450	UT-4	Stabilizing Cap.
15	.025	400		484-03	DT4S3	MPH-6-02	TC-13	Line Filter
16	.025	400		484-03	DT4S3	MPH-6-02	TC-13	" "
17	.025	400		484-03	DT4S3	ST-6-03	TC-13	Audio Coupling
18	.025	400		484-03	DT4S3	ST-6-03	TC-13	" "
19	.05	200		484-05	DT2S5	ST-4-05	TC-15	" "
20	.02	200		484-02	DT2S2	ST-4-02	TC-12	Tone Comp.
21	.05	200		484-05	DT2S5	ST-4-05	TC-15	Audio Coupling
22	.5	200		484-.5	DT2P5	ST-2-5	TC-5	Bias Filter
23	.01	150		484-01	DT2S1	ST-4-01	TC-11	2nd IF Cathode Bypass
24	.1	200		484-.1	DT2P1	ST-2-1	TC-1	AVC Filter
25	.02	400		484-02	DT4S2	ST-4-02	TC-12	RF Bypass Power Supply
26	.02	400		484-02	DT4S2	ST-4-02	TC-12	Decoupling
27	2000			1467-002	1W5D2	MW.5-22	1FM-22	Output Plate Bypass
28	2000			1467-002	1W5D2	MW.5-22	1FM-22	" " "
29	250			1468-00025	5W5T25	MO.5-325	1FM-325	Tone Compensation
30	250			1468-00025	5W5T25	MO.5-325	1FM-325	Tone Comp.
31	5000			1467-005	1D5D5	MW.5-25	1FM-25	" "
32	.6800			1467-006	1D3D7	MW.3-27	1FM-27	Audio Coupling
33	250			1468-00025	5W5T25	MO.5-325	1FM-325	Ratio Det. Load Cap.
34	3000			1467-003	1W5D3	MW.5-23	1FM-23	De-emphasis
35	1500			1467-0015	1W5D15	MW.5-215	1FM-215	2nd IF Plate Decoup.-Cer.
36	1500			1467-0015	1W5D15	MW.5-215	1FM-215	2nd IF Screen Byp.-Cer.
37	1500			1467-0015	1W5D15	MW.5-215	1FM-215	RF Bypass-Cer.
38	100			1468-0001	5W5T1	MO.5-31	1FM-31	Diode RF Filter
39	100			1468-0001	5W5T1	MO.5-31	1FM-31	" " "
40	1500			1468-0015	1W5D15	MW.5-215	1FM-215	AVC Filter-Cer.
41	6800			1467-006	1D3D7	MW.3-27	1FM-27	1st IF Decoupling
42	1500			1467-0015	1W5D15	MW.5-215	1FM-215	1st IF Cathode Byp.-Cer.
43	1500			1467-0015	1W5D15	MW.5-215	1FM-215	FM Conv. Plate Decoup.-Cer.
44	1500			1467-0015	1W5D15	MW.5-215	1FM-215	FM Osc. Plate Decoup.-Cer.
45	25			1468-000025	5W5Q25	MO.5-425	MS-425	Osc. Grid Cap.
46	2							Osc. Coupling-Cer.
47	1500			1467-0015	1W5D15	MW.5-215	1FM-215	Conv. Cathode Bypass-Cer.
48	1500			1467-0015	1W5D15	MW.5-215	1FM-215	RF Coupling-Cer.
49	47			1468-00005	5W5Q5	MO.5-45	1FM-45	" " "
50	1500			1467-0015	1W5D15	MW.5-215	1FM-215	RF Decoupling-Cer.
51	1500			1467-0015	1W5D15	MW.5-215	1FM-215	RF Screen Bypass-Cer.
52	1500			1467-0015	1W5D15	MW.5-215	1FM-215	RF Cathode Bypass-Cer.
53	500			1468-0005	5W5T5	MO.5-35	1FM-35	RF Coupling
54	1500			1467-0015	1W5D15	MW.5-215	1FM-215	Filament Bypass-Cer.
55	1500			1467-0015	1W5D15	MW.5-215	1FM-215	" " "
56	1500			1467-0015	1W5D15	MW.5-215	1FM-215	" " "
57	100			1468-0001	5W5T1	MO.5-31	1FM-31	Phono Tone Comp.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: KNIGHT PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDARSON PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
110	4000Ω CT	3.6Ω	540Ω CT	.4Ω	ZA-15.019	A-3823	T22S60‡	A-2901	‡Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: KNIGHT PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	INSTALLATION NOTES
	FIELD	VC IMP.		ST-119*		*Replace output transformer to match 6-8 voice coil.
111	PM	3.6Ω	LS-13939	Mod. P10-T	10A31	
	CONE DIA.	VC DIA.				
112	9½"	1"				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: KNIGHT PART No.	REPLACEMENT DATA: MEISSNER PART No.	
113	BC Ant.Loop		.3Ω	LA-5.018		
114	FM Di-pole Ant.			LA-5.010		
115	BC Loop Load.Coil		2.2Ω	LA-2.273	14-1056	
116	FM Ant.Coil	0Ω	0Ω	LA-2.241		
117	FM RF Plate Coil		.5Ω	LA-2.279		
118	FM RF Coil		0Ω	LA-2.243		
119	FM Conv. Plate Coil		.1Ω	LA-2.242		
120	BC Osc.Coil	.3Ω	5.5Ω	LA-2.221	14-1060†	†Add 50 MMFD cap. from high side tuning cap. to osc. grid.
121	FM " "	0Ω	0Ω	LA-2.222		
122	AM 1st IF	16Ω	16Ω	ZB-2.275	16-6678	
123	FM " "	.7Ω	.7Ω	ZB-2.276		
124	AM 2nd IF	16Ω	16Ω	ZB-2.275	16-6678	
125	FM " "	.7Ω	.7Ω	ZB-2.276		
126	FM Det. Trans.	.8Ω	.2Ω	ZC-2.278		

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: KNIGHT PART No.	REPLACEMENT DATA:	INSTALLATION NOTES
127-129	Bayonet	6-8	0.15	Brown			Type #47

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA: KNIGHT PART No.	REPLACEMENT DATA: ASTATIC PART No.	REMARKS
130		L-70A	L-70 Original Part

MISCELLANEOUS

ITEM No.	PART NAME	KNIGHT PART No.	NOTES
131	Switch	SA-12.060	Band
132	Tuning Gang	C-6-042	(50-500MMF, 50-500MMF)

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	KNIGHT PART No.	IRC PART No.	CLAROSTAT PART No.	
58A	500KΩ	½	RA-9.069	D18-133X	T-88	Volume Control
B	Shaft		Not Req.	A	Not Req.	Attach to 58A per instructions
59A	1 Meg.	½	RA-9.070	D13-137	M-63-Z	Tone Control
B	Shaft		Not Req.	A	Not Req.	Attach to 59A per instructions
C	Switch		" "	41	SW-A	" " " " "

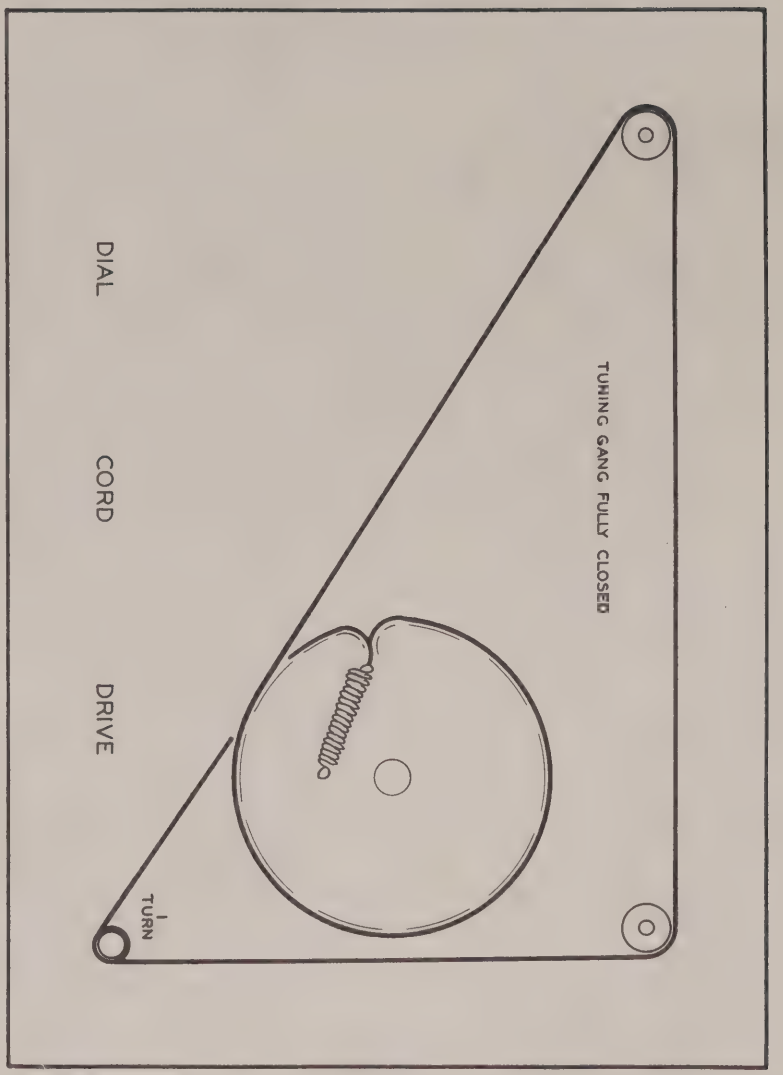
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	KNIGHT PART No.	IRC PART No.	
60	100Ω	½			Br.-Blk.-Br. RF Cathode
61	22KΩ	½		BTS-22K	Red-Red-Or. RF Screen
62	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. FM Conv. Grid
63	47Ω	½			Yl.-Vi.-Blk. FM Conv. Cathode
64	470Ω	½		BTS-470	Yl.-Vi.-Br. FM Conv. Cathode
65	2000Ω	½		BTS-2200	Red-Red-Red FM Conv. Plate Decoup.
66	22KΩ	½		BTS-22K	Red-Red-Or. FM Osc. Grid
67	2200Ω	½		BTS-2200	Red-Red-Red FM Osc. Plate Decoup.
68	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AM Conv. Grid
69	1200Ω	½		BTS-1200	Br.-Red-Red Ant. Loading
70	15KΩ	2		BT-2-15K	Br.-Grn.-Or. AM Conv. Decoupling
71	22KΩ	½		BTS-22K	Red-Red-Or. AM Osc. Grid
72	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
73	2.4 Meg.	½		BTS-2.2 Meg.	Red-Yl.-Grn. " "
74	100Ω	½			Br.-Blk.-Br. 1st IF Cathode
75	2000Ω	½		BTS-2000	Red-Blk.-Red 1st IF Decoupling
76	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Diode Filter
77	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Diode Load
78	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AVC Network
79	220KΩ	½		BTS-220K	Red-Red-Yl. " "
80	100Ω	½			Br.-Blk.-Br. 2nd IF Cathode
81	22KΩ	½		BTS-22K	Red-Red-Or. 2nd IF Screen
82	1200Ω	½		BTS-1200	Br.-Red-Red 2nd IF Plate Decoupling
83	22KΩ	½		BTS-22K	Red-Red-Or. De-emphasis
84	12KΩ	½		BTS-12K	Br.-Red-Or. Ratio Det. Diode Load
85	12KΩ	½		BTS-12K	Br.-Red-Or. " " " "
86	220KΩ	½		BTS-220K	Red-Red-Yl. AVC Network
87	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Bias Network
88	100KΩ	½		BTS-100K	Br.-Blk.-Yl. AVC Network
89	22KΩ	½		BTS-22K	Red-Red-Or. Tone Comp.
90	10KΩ	½		BTS-10K	Br.-Blk.-Or. " "
91	6.8 Meg.	½		BTS-6.8 Meg	Blue-Gray-Grn. 1st AF Grid
92	220KΩ	½		BTS-220K	Red-Red-Yl. 1st AF Plate Load
93	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Tone Comp.
94	220KΩ	½		BTS-220K	Red-Red-Yl. 2nd AF Grid
95	2000Ω	½		BTS-2200	Red-Blk.-Red 2nd AF Cathode
96	15Ω	½		BW-½-15	Br.-Grn.-Blk. " " "
97	220KΩ	½		BTS-220K	Red-Red-Yl. 2nd AF Plate Load
98	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Phase Inverter Plate Load
99	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Phase Inverter Cathode
100	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Phase Inverter Grid
101	2000Ω	½		BTS-2200	Red-Blk.-Red Decoupling
102	220KΩ	½		BTS-220K	Red-Red-Yl. Output Grid
103	220KΩ	½		BTS-220K	Red-Red-Yl. " "
104	200Ω	2		BW-2-220	Red-Blk.-Br. Output Cathode
105	100Ω	½		BW-½-100	Br.-Blk.-Br. Feedback
106	2200Ω	10		AB-2250	Filter
107	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. Phono Tone Comp.
108	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Phono Shunt

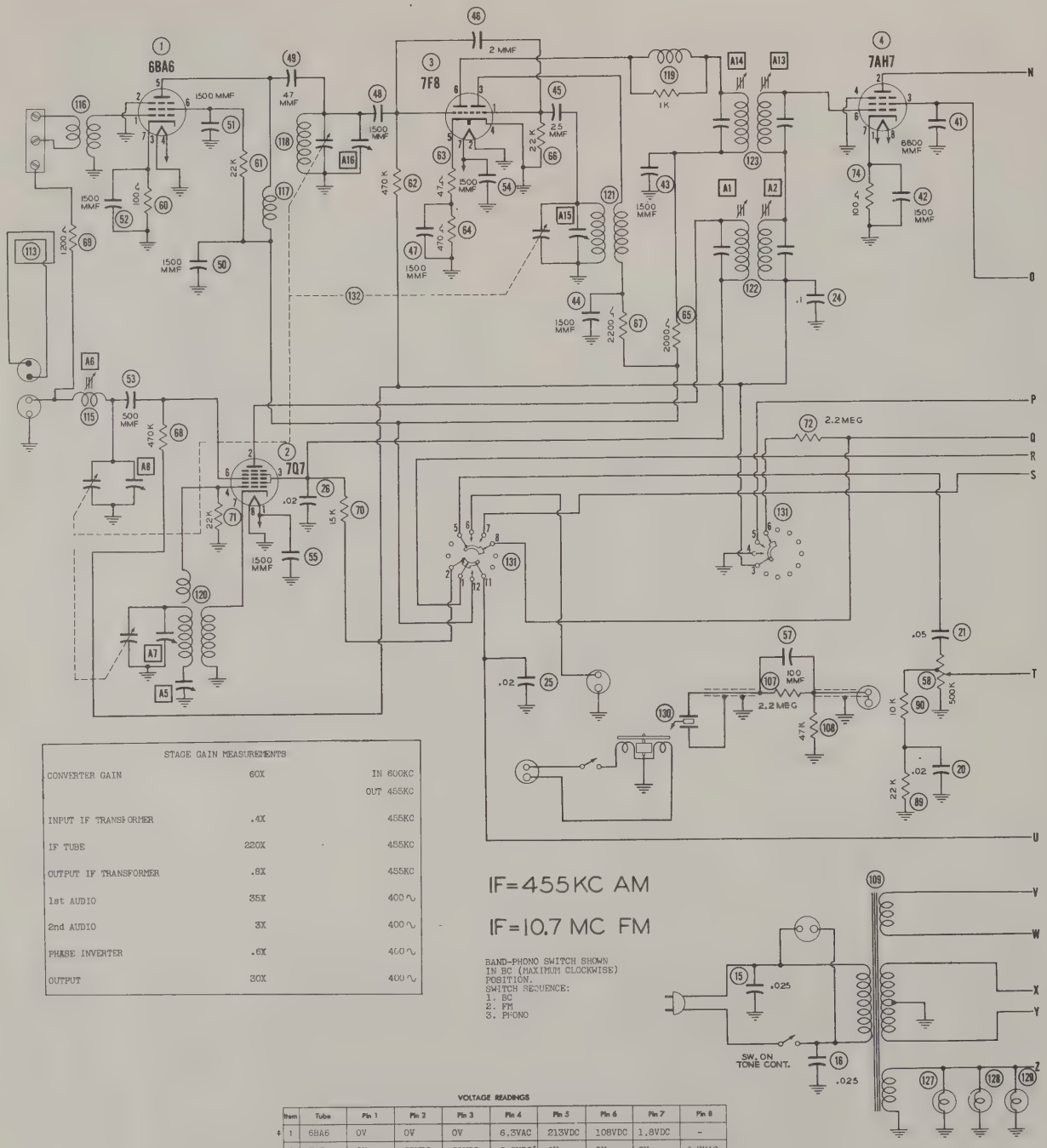
TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	KNIGHT PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
109	117V AC @ .8A	660V CT .102A DC	5.0V AC @ 2.0A	6.3V AC @ 3.2A	ZA-18.053	P-6013#	T-22R05	P-2953#

#Add series resistor to reduce plate voltage.



DATE 3/46 #495-9 SET #57-FOLDER #9



STAGE GAIN MEASUREMENTS		
CONVERTER GAIN	60X	IN 600KC OUT 455KC
INPUT IF TRANSFORMER	.4X	455KC
IF TUBE	220X	455KC
OUTPUT IF TRANSFORMER	.8X	455KC
1st AUDIO	35X	400 ∿
2nd AUDIO	3X	400 ∿
PHASE INVERTER	.6X	400 ∿
OUTPUT	30X	400 ∿

IF=455KC AM

IF=10.7 MC FM

BAND-PHONO SWITCH SHOWN IN BC (MAXIMUM CLOCKWISE) POSITION.
SWITCH SEQUENCE:
1. BC
2. FM
3. PHONO

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
‡ 1	6BA6	0V	0V	0V	6.3VAC	213VDC	108VDC	1.8VDC	-
2	7Q7	0V	95VDC	95VDC	-9.5VDC§	0V	0V	0V	6.3VAC
‡ 3	7F8	-5VDC§	0V	195VDC	0V	2.9VDC	200VDC	6.3VAC	0V
4	7AH7	0V	238VDC	238VDC	0V	0V	0V	1.3VDC	6.3VAC
‡ 5	6SH7	0V	0V	1.3VDC	0V	1.3VDC	130VDC	6.3VAC	180VDC
‡ 6	7A6	0V	2.6VDC	2.2VDC	-.2VDC	0V	.6VDC	2.2VDC	6.3VAC
7	6BQ7GT	0V	-.6VDC	0V	-.3VDC	-.1VDC	105VDC	0V	6.3VAC
8	7F7	0V	80VDC	163VDC	78VDC	0V	78VDC	1VDC	6.3VAC
9	7C5	0V	330VDC	250VDC	0V	0V	0V	15VDC	6.3VAC
10	7C5	0V	330VDC	250VDC	0V	0V	0V	15VDC	6.3VAC
11	5Y3GT	0V	335VDC	0V	330VAC	0V	330VAC	0V	335VDC

§TAKEN WITH VACUUM TUBE VOLTMETER

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

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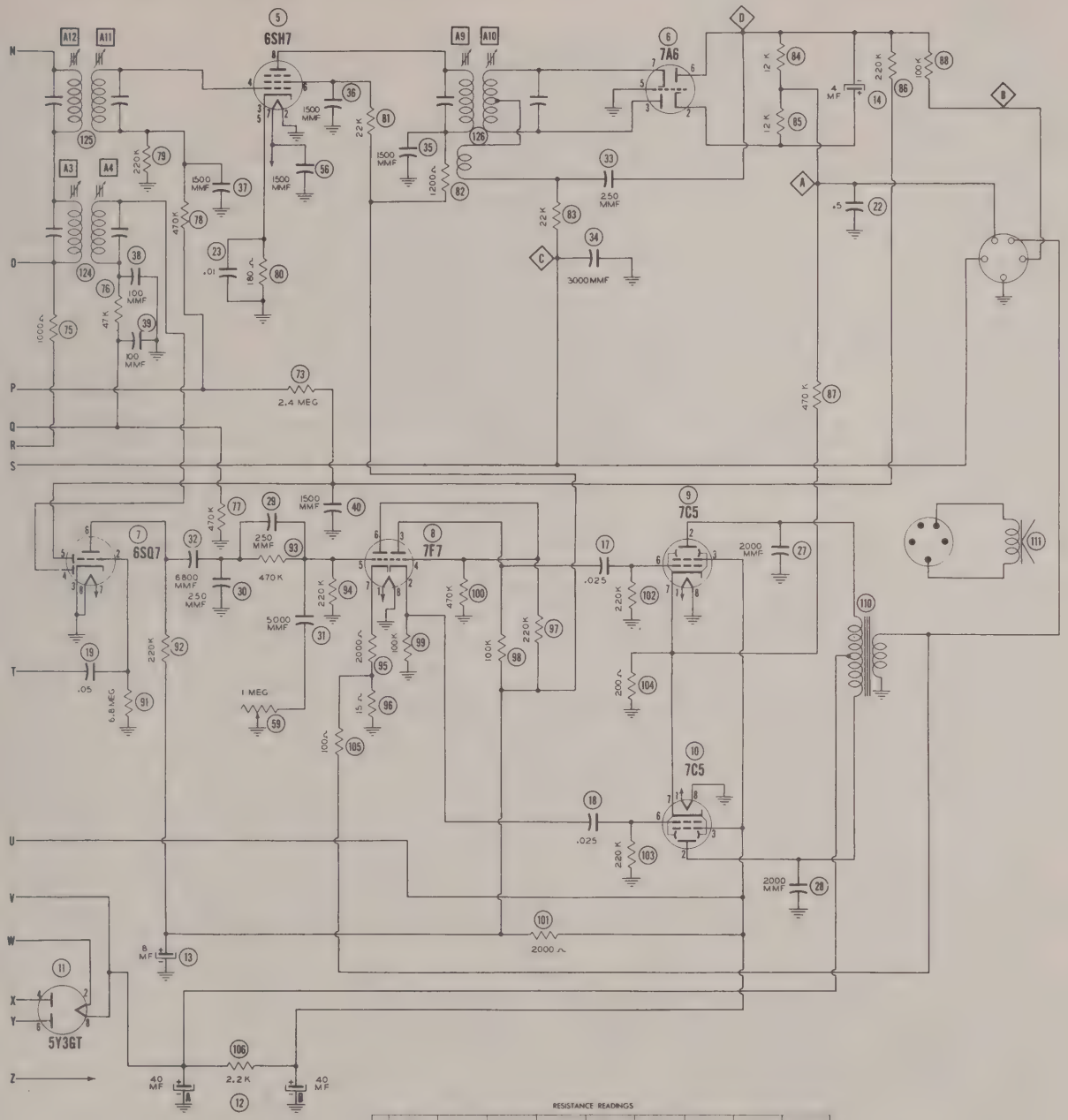

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
‡ 1	6SH7	0	220K	0	1.05Ω	0.27K	3.5K	11.0K	-
2	"	0	220K	0	190KΩ	0	3.5K	11.0K	0.5K
‡ 3	7A6	0	220K	0	0Ω	5.1K	3.5K	0.5K	1.2Meg.
4	"	0	220K	0K	0Ω	0Ω	3.5K	11.0K	0.5K
‡ 5	6SQ7	0	220K	0	0.40KΩ	120K	220K	0.5K	0.5K
‡ 6	"	0	220K	INF.	0.40KΩ	0Ω	220K	INF.	0.5K
7	7F7	0	0.05Meg.	0	10KΩ	570KΩ	270KΩ	0	0.5K
8	"	0K	1.0K	1.0K	190KΩ	220K	11.0K	0.5K	0.5K
9	7C5	0	5.0K	0.5K	INF.	INF.	0.5K	0.5K	0.5K
10	"	0	5.0K	0.5K	INF.	INF.	0.5K	0.5K	0.5K
11	5Y3GT	INF.	50KΩ	INF.	130Ω	INF.	130Ω	INF.	0.5K

‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial.

Use insulated alignment screwdriver for all adjustments.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to front AM stator of tuning cap. Low side to chassis.	455KC	AM (fully clock-wise)	Tuning cap. fully open.	Across voice coil.	A1,A2, A3,A4	Adjust for maximum output.
2	200MMFD	High side to ext. ant. terminal. Low side to chassis.	600KC	"	600KC	"	A5,A6	" " " "
3	200MMFD	"	1600KC	"	1600KC	"	A7	" " " "
4	200MMFD	"	"	"	Tune for maximum output.	"	A8	Adjust for maximum output. Repeat Steps 2, 3 and 4 until no further improvement can be made.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR, VTVM & OUTPUT METER

In step 6 after adjustment of A10 for zero deflection tune sig. gen. 200KC above 10.7MC and note meter reading. Then tune sig. gen. 200KC below 10.7MC and note the meter reading. These two should be about equal. If they are not then A9 should be readjusted until the two readings are approximately equal.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5	.01 MFD.	High side to Pin 4 (grid) of 6SH7. Low side to chassis.	10.7MC (Unmodu-lated)	FM (center position)	Tuning cap. fully open.	DC probe to Point (B). Common to Point (A).	A9	Adjust for maximum deflection.
6	.01 MFD.	"	"	"	"	DC probe to Point (C). Common to Point (A).	A10	Use a zero center scale VTVM if available and adjust for maximum output. Check linearity per pre-alignment notes.
						OUTPUT METER		
7	.01 MFD.	High side to Pin 6 (grid) of 7AH7. Low side to chassis.	10.7MC (400∿30% amplitude mod.)	FM (center position)	Tuning cap. fully open.	Across voice coil.	A11, A12	Connect 1000Ω carbon resistor across primary of ratio detector transformer (122). Adjust A11 & A12 for maximum output.
8	.01 MFD.	High side to Pin 8 (grid) of 7F8. Low side to chassis.	"	"	"	"	A13, A14	Adjust for maximum output. Remove 1000Ω resistor. Continue with FM-RF Alignment in Step 9.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use freq. modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
5	.01 MFD	High side to Pin 6 (grid) of 7AH7. Low side to chassis.	10.7MC (Freq. Mod.)	FM	Tuning cap. fully open.	Vertical input to Point (D). Ground to Point (A).	A9, A11 A12	Disconnect 4 MFD cap. from point (D). Adjust A9, A11 & A12 for maximum amplitude, symmetry and coincidence of pattern per Fig. 1.
6	.01 MFD	Disconnect cap. (48) from Pin 8 (grid) of 7F8. High side of sig. gen. to Pin 8. Low side to chassis.	"	"	"	"	A13, A14	Adjust for maximum amplitude, symmetry and coincidence of pattern per Fig. 1. Reconnect 4 MFD cap. to Point (D) and cap. (48) to pin 8 of 7F8.
7	.01 MFD	High side to Pin 6 (grid) of 7AH7. Low side to chassis.	"	"	"	Vertical input to Point (C). Ground to chassis.	A10	Adjust for maximum straightness of crossover lines with crossover occurring at center of pattern per Fig. 2. Continue with FM-RF Alignment in Step 9.

FM RF ALIGNMENT

Attenuate output of signal generator to maintain maximum meter deflection of 2 volts.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
9	2- 150Ω carbon res.	Each side to FM dipole terminal.	108MC (Unmodu-lated)	FM	108MC	DC probe to Point (B). Common to Point (A).	A15	Adjust for maximum deflection.
10	"	"	"	"	Tune for maximum deflection.	"	A16	Adjust for maximum deflection. Repeat Steps 9 & 10 until no further improvement can be made.
11	"	"	90MC	"	"	"	FM-RF Coil (115)	Compress or expand turns slightly for maximum deflection. Repeat Steps 9, 10 & 11 until no further improvement can be made.

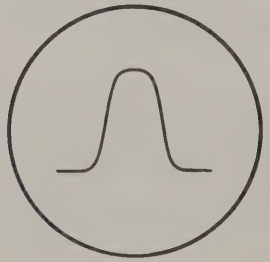


FIG. 1

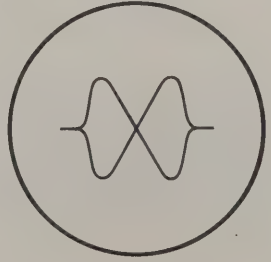
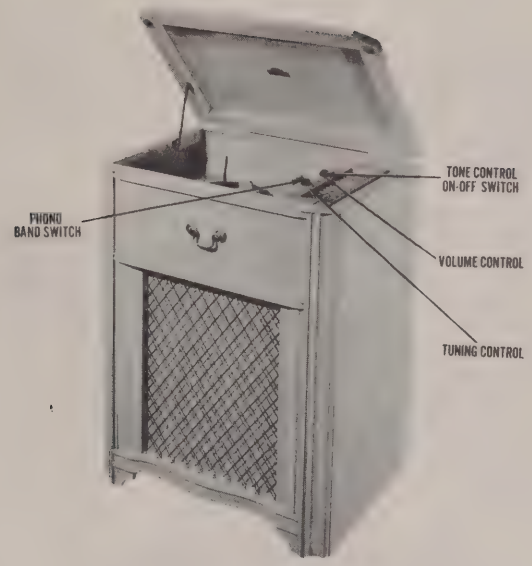


FIG. 2

MAJESTIC MODEL
6FM773 (Ch. 6B11D)



MAJESTIC MODEL 6FM773

TRADE NAME	Majestic, Model 6FM773 (Ch. 6B11D)
MANUFACTURER	Majestic Radio & Television Corp., Elgin, Ill.
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Ant.
TUBES(SIX)	Types 12BE6 AM Converter, 12SK7GT AM IF Amp., 12SQ7GT Det-AVC-AF, 12AT7 FM Converter, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC — Rating .31 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1610KC — FREQ. MOD. 88-108 MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

There are 8 calibration marks on the top edge of dial back plate. These are in order from left to right: Low Freq. End Limit, 88MC, 600KC, 98MC, 1050KC, 104MC, 108MC and 1500KC. To set dial pointer turn tuning cap. fully closed and set pointer to low freq. end limit.
Use: isolation transformer if available. If not connect a .1 MFD cap. in series with low side of signal generator and B-.
Loop: should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume: control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an inslated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01 MFD	High side to external AM Ant. terminal Low side to B-.	455KC	AM counter-clock-wise	Tuning cap. fully open	Across voice coil	A1,A2, A3,A4	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001 MFD to reduce hum modulation.
2.		Loop	1500KC	"	1500K calibration mark	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	"	"	Tune for maximum output	"	A6	Rock tuning Cap. and adjust for maximum output.
4.	300Ω carbon resistor	High side to external FM Antenna Terminal "dipole" Low side to Ant. terminal "FM". (Line Ant. Disconnected.)	19MC (Unmodulated)	FM clock-wise	Tuning Cap. fully open	"	A7	Adjust for minimum output.
5.	"	"	104 MC(Unmodulated)	"	104 MC Calibration mark	"	A8	" " " "
6.	"	"	"	"	Tune for minimum output	"	A9	Rock tuning cap. and adjust for minimum output.

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PARTS LIST AND DESCRIPTIONS

MAJESTIC
MODEL 6FM773

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MAJESTIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	AM Converter	12BE6	12BE6	7CH	
2	AM IF Amp.	12SK7GT	12SK7GT	8N	
3	Det-AVC-AF	12SQ7GT	12SQ7GT	8Q	
4	FM Converter	12AT7	12AT7		
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

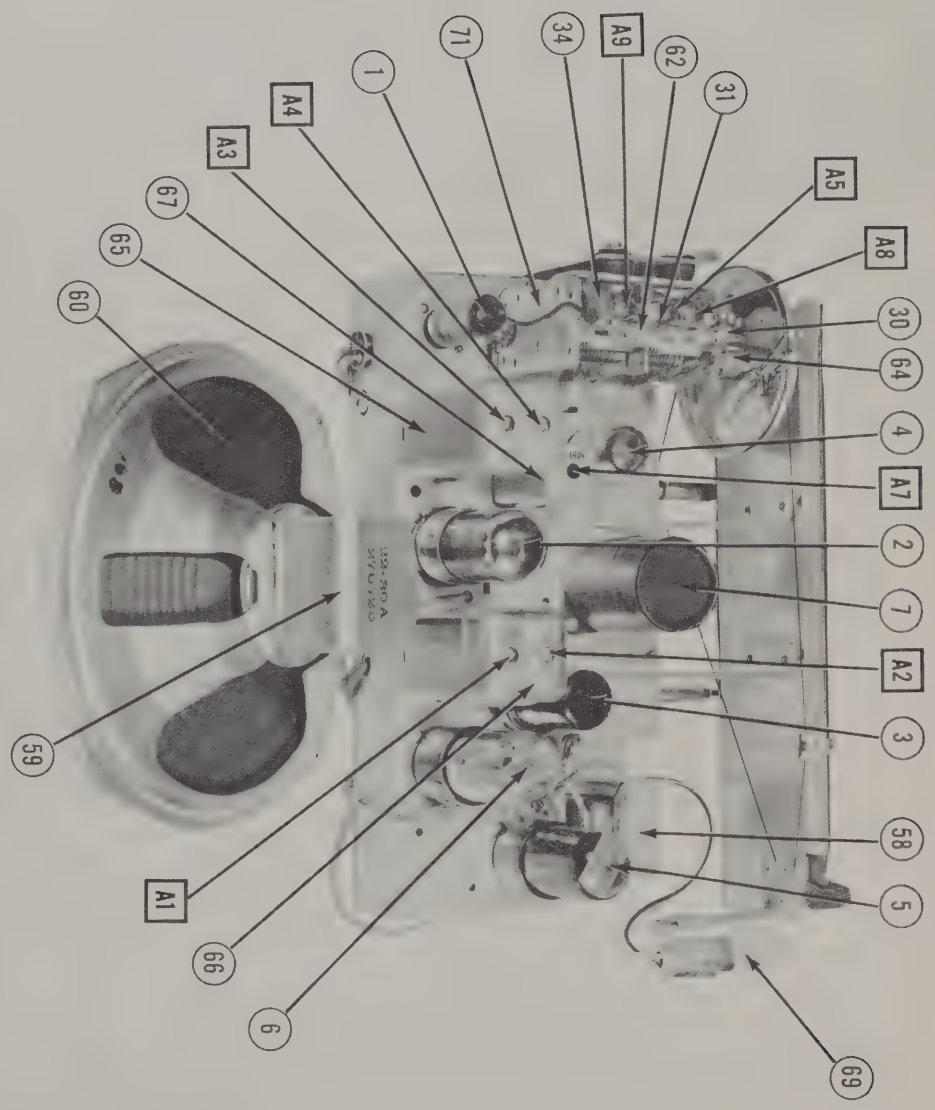
ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MAJESTIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	19-59	AF 1016-10D4A #	UP7DJ63	DY-3X40-150#	EL340#	Filter ◓
B	40	150						Filter ▲
C	40	150						Decoupling ■
D	100	10		PRS 25/100		M-100-12	UHC-112	Cathode Bypass
E	20	150		PRS 150/20	BR2015	M-20-150	UT-201	Filter See Note
9	10	25	19-58	PRS 25-10	BR102A	M-10-25	TA-10	Stabilizing Cap.
10	.05	400	016-8	484-.05	DT4S5	ST-4-05	TC-15	Line Filter
11	.2	200	5-51	484-.2	DT4P2	ST-4-2	72P3	Line Isolation
12	.005	600	017-4	684-.005	DT6D5	ST-6-005	TC-25	Tone Comp.
13	.01	400	016-5	484-.01	DT4S1	ST-4-01	TC-25	Audio Coupling
14	.01	400	016-5	484-.01	DT4S1	ST-4-01	TC-25	Tone Comp.
15	.05	200	015-8	484-.05	DT2S5	ST-4-05	TC-15	Phono Isolation
16	.02	400		484-.02	DT4S2	ST-4-02	TC-12	Audio Coupling
17	.05	200	015-8	484-.05	DT2S5	ST-4-05	TC-15	Isolation
18	.05	400		484-.05	DT4S5	ST-4-05	TC-15	AVC Filter
19	870	500	6-229	684-.001	DT6D1	ST-6-001	TC-21	Output Plate Bypass See Note
20A	10000	300	*	484-.01	DT4S1	ST-4-01	TC-11	Audio Coupling Cer.
B	220	300		1468-.0002	5W5T2	MO.5-32	1FM-32	AF Plate Bypass
21	220	500	020-53	1468-.0002	5W5T2	MO.5-32	1FM-32	Diode RF Filter
22	15	500	6-88				MS-415	Fixed Trimmer Cer.
23	1000	500	4-6	1468-.001	1W5D1	MW.5-21	1FM-21	De-emphasis
24	700	500	6-228	1468-.00075	1W5T7	MO.3-37	1FM-37	RF Bypass Pwr. Supply
25	5000	300	4-4	1467-.005	1D5D5	MW.5-25	1FM-25	RF Bypass Cer.
26	30	300	4-5		5R5Q3	MOS.5-43	MS-43	Regen. Feedback "
27	30	300	4-5		5R5Q3	MOS.5-43	MS-43	Regen. Feedback "
28	3300	500	021-38	1467-.003	1W5D3	MW.5-23	1FM-23	Quench Net.
29	30	300	4-5		5R5Q3	MOS.5-43	MS-43	OSC Grid. Cap. Cer.
30	68	300	4-8					Fixed Padder "
31	2.2	300	6-134					Osc Coupling "
32	470	500	020-67	1469-.0005	5R5T5	MOS.5-35	MS-35	RF Bypass Silver
33	1000	300	4-6	1468-.001	1W5D1	MW.5-21	1FM-21	RF Bypass Cer.
34	470	500	020-67	1468-.0005	5W5T5	MO.5-35	1FM-35	RF Bypass
35	2.2	300	6-134					FM Ant. Coupling Cer.
36	1000	300	4-6	1468-.001	1W5D1	MW.5-21	1FM-21	FM Ant. Isolation "
37	1000	300	4-6	1468-.001	1W5D1	MW.5-21	1FM-21	Rectifier Bypass "
38	1000	300	4-6	1468-.001	1W5D1	MW.5-21	1FM-21	Screen Decoupling "

Install new mounting socket.
‡ Omit bypass section.
* Items 20A, B, 53A, B are combined into one unit obtainable under Mfgs. part #37-1
Note Not used in all models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MAJESTIC PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
39A	2 Meg.	‡	13-30			Volume Control tapped @ 100KΩ.
B	500KΩ	‡				Tone control and Switch.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES	
	RESISTANCE	WATTS	MAJESTIC PART No.	IRC PART No.		
40	33KΩ	½	02-150	BTS-33K	Or.-Or.-Or.	FM Oscillator Grid.
41	150KΩ	½	02-178	BTS-150K	Br.-Grn.-Yl.	Voltage Dropping
42	100KΩ	½	02-171	BTS-100K	Br.-Blk.-Yl.	De-emphasis
43	150Ω	½	02-94	BTS-150	Br.-Grn.-Red	Quench Network
44	22KΩ	½	02-143	BTS-22K	Red-Red-Or.	FM Converter Cathode
45	22KΩ	½	02-143	BTS-22K	Red-Red-Or.	AM Oscillator Grid.
46	3.3 Meg.	½	02-234	BTS-3.3 Meg	Or.-Or.-Grn.	AVC Network
47	100KΩ	½	02-171	BTS-100K	Br.-Blk.-Yl.	AM-IF Transformer Shunt
48	120Ω	1	03-90	BTA-1200	Br.-Red-Red	Decoupling
49	22KΩ	½	02-143	BTS-22K	Red-Red-Or.	Diode RF Filter
50	12KΩ	½	02-132	BTS-12K	Br.-Red-Or.	Tone Compensation
51	5600Ω	½	02-118	BTS-5600	Grn.-Blue-Red	" "
52	10 Meg.	½	02-255	BTS-10 Meg.	Br.-Blk.-Blue	AF Grid.
53A	500KΩ	½	*	BTS-470K		AF Plate Load
B	500K	½		BTS-470K		Output Grid.
54	150Ω	½	02-52	BW-½-150	Br.-Grn.-Br.	Output Cathode
55	1200Ω	½	03-90	BTA-1200	Br.-Red-Red	Filter
56	22Ω	½	02-17		Red-Red-Blk.	Rectifier Ballast
57	220Ω	2		BW-2-220Ω	Red-Red-Br.	Series Pilot Light See Note

* Items 20A, 20B, 53A, 53B, can be obtained as one unit under Part #37-1.
Note Some models use 390Ω in this application, IRC replacement BW-2-390.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MAJESTIC PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
58	4100Ω	3.5Ω	370Ω Tap @ 1c.t.	.4Ω	2-40	A-3430		A-3031	

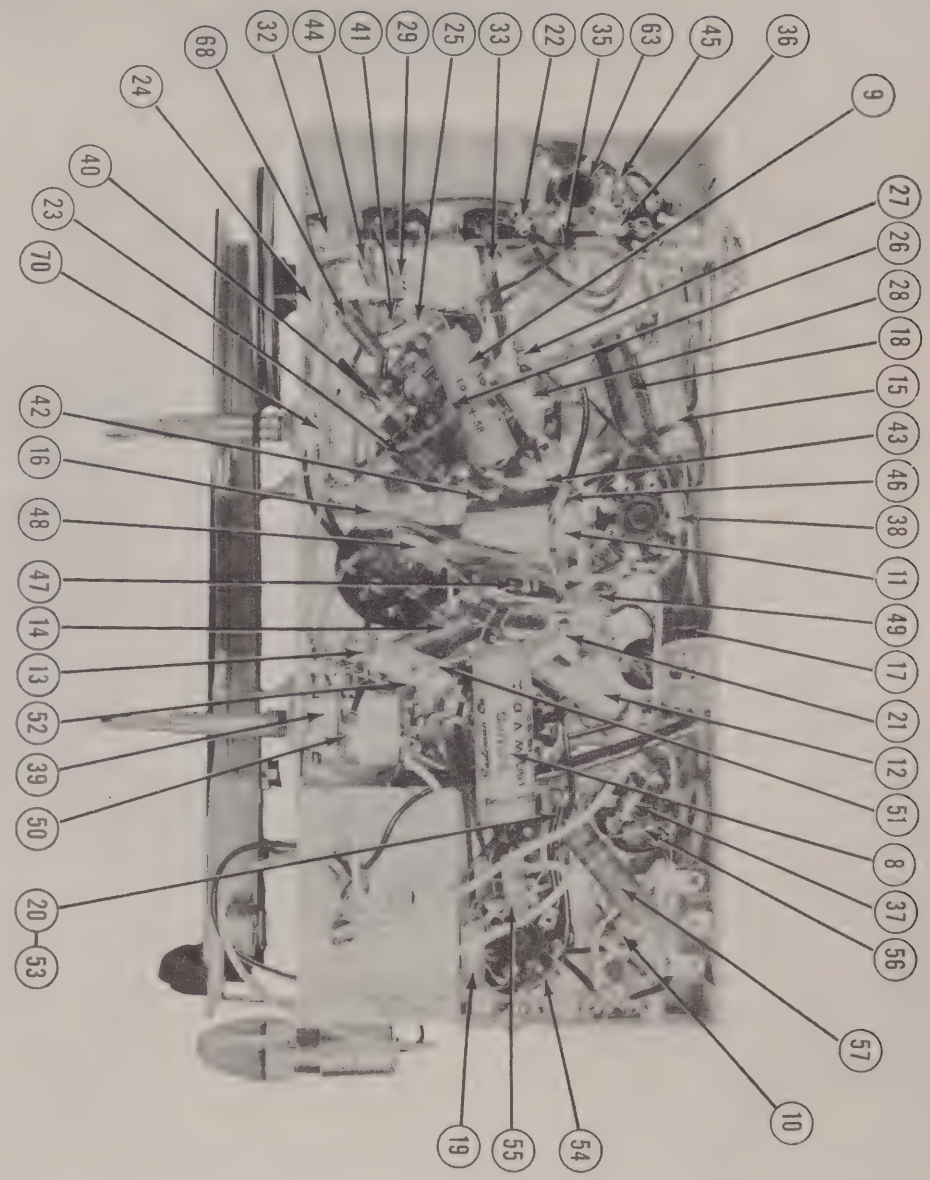
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	VC IMP.	MAJESTIC PART No.	JENSEN PART No.	QUAM PART No.	
59	PM	3.5Ω	22-30	ST-115 Mod. Pm-V	8A31	
	CONE DIA	VC DIA				
60	7-3/8"	9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	MAJESTIC PART No.	MEISSNER PART No.	
61	Loop Ant.	.5Ω	1.5Ω	S1922		
62	FM Ant.Coil		0Ω	3-205		
63	OSC Coil AM	1.2Ω	5.5Ω	S1864	14-1060§	§ Add 50 MMF from high side tuning cap. to OSC Grid.
64	FM OSC Coil		0Ω	3-206		
65	Input IF	12Ω	12Ω	3-116	16-6658	
66	Output IF	12Ω	12Ω	3-117	16-6660	
67	FM IF	1.6Ω	.5Ω	S1678		
68	OSC Cath.Chk		1.8Ω	S1626		

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHT

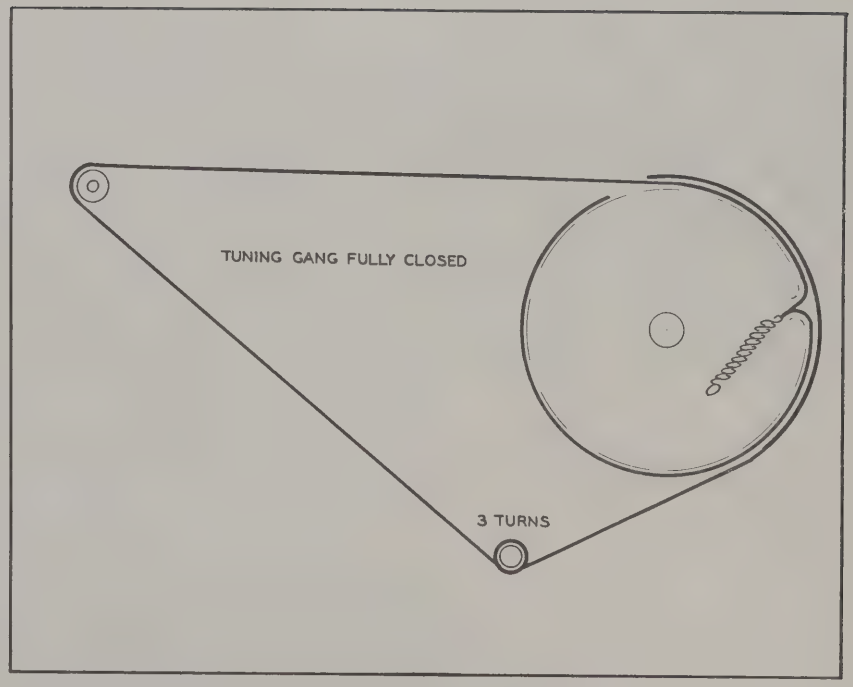
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					MAJESTIC PART No.		
69	Bayonet	110			26-21		Type C7

MISCELLANEOUS

ITEM No.	PART NAME	MAJESTIC PART No.	NOTES
70	Switch	11-81	AM-FM-Phono
71	2 Gang Var.Cap.	7-33	(18-521MMF, 17-187MMF)
A6	Trimmer	8-59	BC Ant. ADJ.
	Dial Pointer	135-33	
	Knob	128-63	Tuning
	Knob	128-68	Tone-on-off
	Knob	128-69	Volume
	Knob	128-80	Band Switch

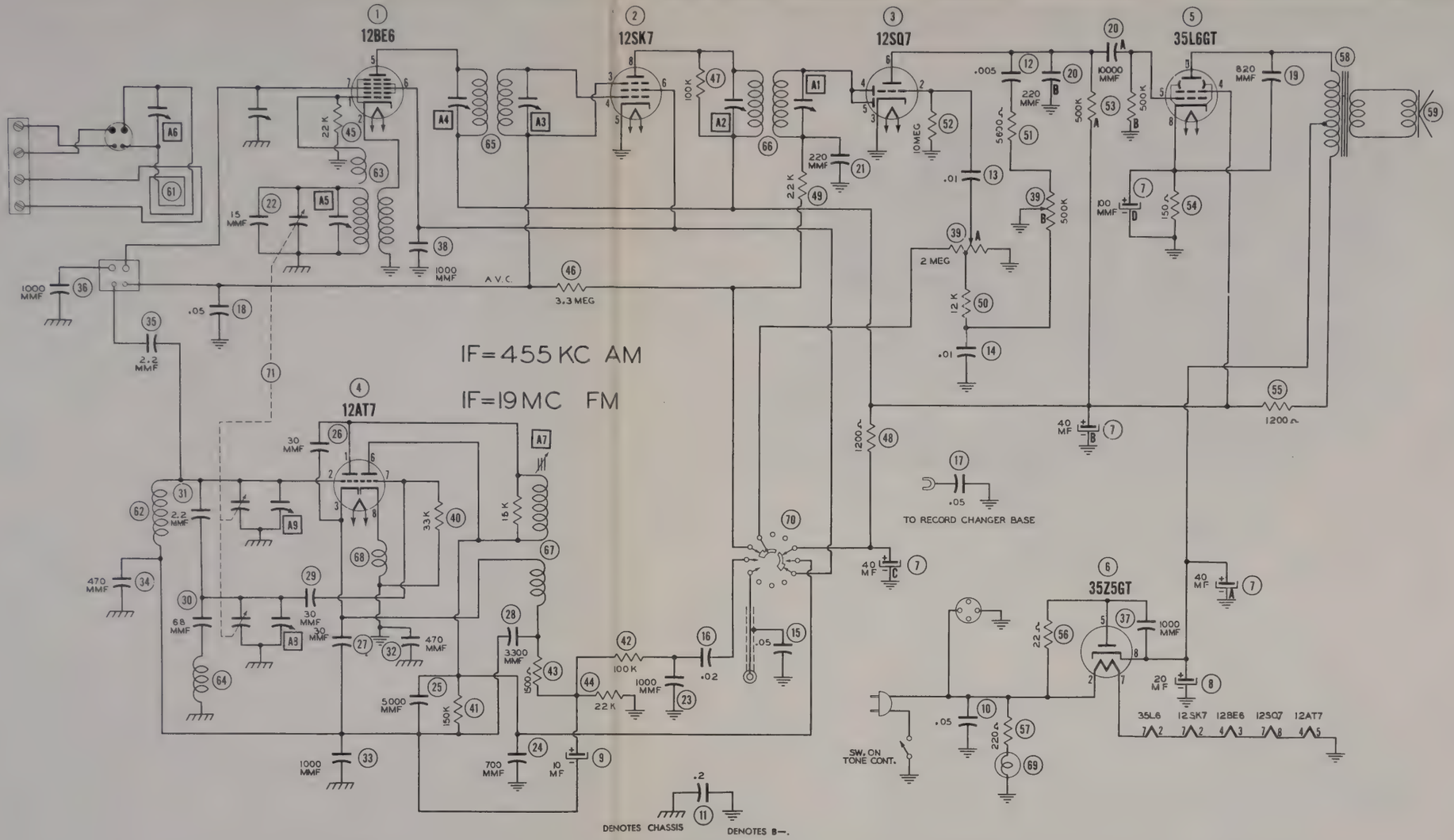
DISASSEMBLY INSTRUCTIONS

1. Remove Phillips head screws holding back cover to cabinet.
2. Remove leads to Loop Antenna. Remove back cover.
3. Disconnect Phono motor plug and Phono pickup plug from chassis.
4. Remove wire with lug from record changer spindle brace, underneath record changer, from hex screw.
5. Remove one push-on type knob and one set screw type knob from receiver controls. on face of receiver.
6. Remove two hex type screws from chassis inside of record changer wall.
7. Remove chassis.



DIAL CORD DRIVE

DATE 3/48-#495-10 SET #57-FOLDER #10



VOLTAGE READINGS — VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	12BE6	3-6.8VDC	0V	28VAC	38VAC	90VDC	80VDC	-.1VDC		
2	12SK7GT	0V	38VAC	-.4VDC	-.1VDC	0V	80VDC	50VAC	90VDC	
3	12SQ7GT	0V	-.3VDC	0V	-.1.VDC	-1.1VDC	50VDC	26VAC	12VAC	
‡4	12AT7	120VDC	30VDC	50VDC	12VAC	0V	100V DC	§-2.2VDC	0V	6.4VAC
5	35L6GT	0V	50VDC	100VDC	90VDC	0V	0V	85VAC	5.9VDC	
‡6	35Z5GT	0V	117VAC	112VAC	0V	109VAC	100VAC	85VAC	120VDC	

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	12BE6	22KΩ	1.2Ω	25Ω	38Ω	180KΩ	160KΩ	5.3 Meg.		
2	12SK7GT	Inf.	38Ω	5.3Meg.	5.3Meg.	0Ω	180kΩ	52Ω	180KΩ	
3	12SQ7GT	Inf.	10 Meg.	0Ω	2Meg.	2Meg	700KΩ	25Ω	11Ω	
‡4	12AT7	180KΩ	330KΩ	25KΩ	11Ω	0Ω	180KΩ	33KΩ	1.3Ω	6Ω
5	35L6GT	Inf.	52Ω	130KΩ	180KΩ	500KΩ	0Ω	85Ω	150Ω	
6	35Z5GT	Inf.	107Ω	100Ω	Inf.	130Ω	140Ω	85Ω	180KΩ	

‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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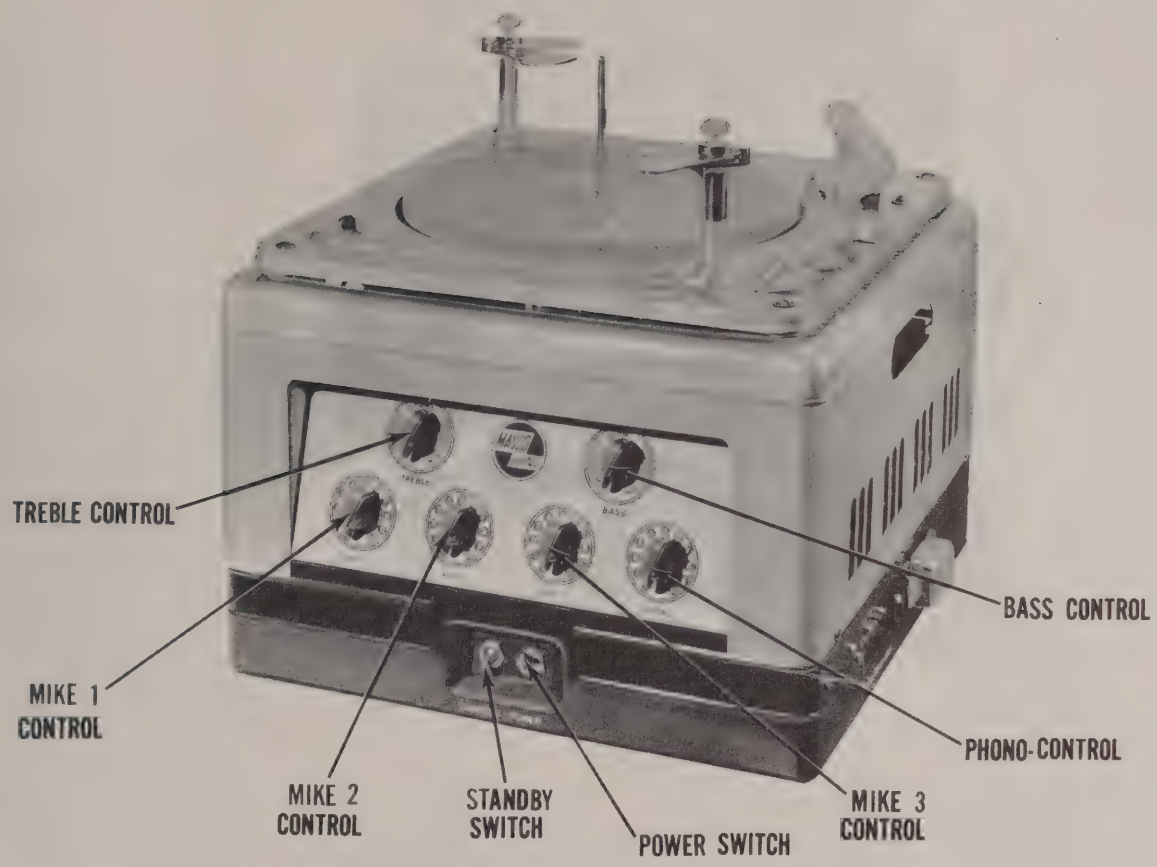
MASCO MODELS MC-25N,
MC-25PC, MC-25PN, MC-25RC



MASCO MODELS MC-25N,
MC-25PC, MC-25PN, MC-25RC

MASCO MODEL MC-25RC

TRADE NAME	Masco, Models MC-25N, MC-25PC, MC-25PN, MC25RC
MANUFACTURER	Mark Simpson Mfg. Co. Inc., 32-28 49th St. Long Island City, N. Y.
TYPE SET	AC or Battery Operated 4 Channel Audio Amplifier.
TUBES (NINE)	Types 6J7 MIC 1 Amp., 6J7 MIC 2 Amp. 6J7 MIC 3 Amp., 6SC7 Mixer-Amp., 6J7 1st AF Amp., 6SL7GT 2nd AF-Phase Inv. (2) 6L6G Power Output, 5V4G Rectifier.
POWER SUPPLY	110-120 Volts AC or 6 Volt Storage Battery
RATING	1.1 Amp. @ 117 Volts AC or 24 Amp. @ 6.3 Volts DC

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DATE 3/49 #495-11 SET #57 FOLDER #11

PARTS LIST AND DESCRIPTIONS

MASCO
MODEL MC-25RC

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		MASCO PART No.	STANDARD REPLACEMENT		
1	MIC 1 Amp.		6J7	7R	
2	MIC 2 Amp.		6J7	7R	
3	MIC 3 Amp.		6J7	7R	
4	Mixer-Amp.		6SC7	8S	
5	1st AF		6J7	7R	
6	2nd AF-PhaseInv.		6SL7GT	8BD	
7	Power Output		6L6G	7AC	
8	Power Output		6L6G	7AC	
9	Rectifier		5V4G	5L	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

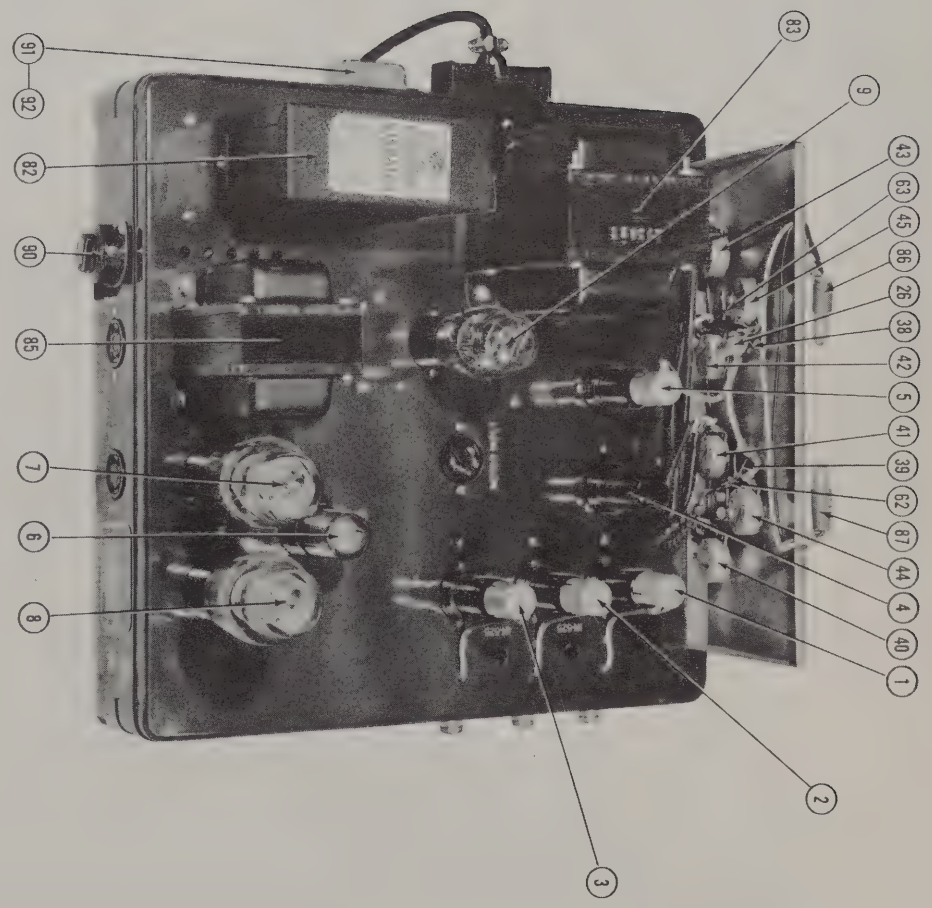
ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	MASCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	
10	16	450		PRS 450/16	BR1645	M-16-450	UT-16	Filter
11	16	450		PRS 450/16	BR1645	M-16-450	UT-16	Filter
12	8	450		PRS 450/8	BR845	M-8-450	UT-8	Decoupling
13A	8	450		PRSA 450/8-8	EDL-8845	M-2X8-450	UT-88	" Red
13B	8	450						" Red
14	50	50		PRS 50/50	BR505	M-50-50	TA-550	Cathode Bypass
15	50	50		PRS 50/50	BR505	M-50-50	TA-550	Cathode Bypass
16	.1	600		684- 1	GT6P1	ST-6-1	TC-1	Line Filter
17	1.75	400		PWP 600-2		XKMR-4-1.75	BP-206	Line Bypass
18	.5	600		684- 5	GT6P5	ST-6- 5	TC-5	Hash Filter
19	.1	600		684- 1	GT6P1	ST-6-1	TC-1	Hash Filter
20	.1	600		684- 1	GT6P1	ST-6-1	TC-1	Hash Filter
21	.1	600		684- 1	GT6P1	ST-6-1	TC-1	Hash Filter
22	.006	1600		1684-006	GT16D6	STM-16-006	TR-26	Buffer
23	.1	600		684- 1	GT6P1	ST-6-1	TC-1	Audio Coupling
24	.1	600		684- 1	GT6P1	ST-6-1	TC-1	Audio Coupling
25	.05	600		684-05	GT6S5	ST-6-05	TC-15	Audio Coupling
26	.005	600		684-005	GT6D5	ST-6-005	TC-25	Tone Comp.
27	.05	600		684- 05	GT6S5	ST-6-05	TC-15	Audio Coupling
28	.01	600		684- 01	GT6S1	ST-6-01	TC-11	Audio Coupling
29	.01	600		684- 01	GT6S1	ST-6-01	TC-11	Audio Coupling
30	.01	600		684- 01	GT6S1	ST-6-01	TC-11	Audio Coupling
31	.1	600		684- 1	GT6P1	ST-6-1	TC-1	MicAmp #1 Screen Bypass
32	.1	600		684- 1	GT6P1	ST-6-1	TC-1	MicAmp #2 Screen Bypass
33	.1	600		684- 1	GT6P1	ST-6-1	TC-1	MicAmp #3 Screen Bypass
34	.005	600		684- 005	GT6D5	ST-6-005	TC-25	Audio Coupling
35	.005	600		684- 005	GT6D5	ST-6-005	TC-25	Audio Coupling
36	.005	600		684- 005	GT6D5	ST-6-005	TC-25	Audio Coupling
37	500	500		1468-0005	5W5T5	MO.5-35	1FM-35	Output Grid Bypass *
38	500	500		1468-0005	5W5T5	MO.5-35	1FM-35	Tone Comp.
39	500	500		1468-0005	5W5T5	MO.5-35	1FM-35	Tone Comp.

*-Not used in all models.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	MASCO PART No.	IRC PART No.	CLAROSTAT PART No.	
40A	500KΩ	½		D13-133	M-60-Z	Mike 1 Control
B	Shaft			A	NOT REQ	Attach to 40A Per Instructions
41A	500KΩ	½		D13-133	M-60-Z	Mike 2 Control
B	Shaft			A	NOT REQ	Attach to 41A Per Instructions
42A	500KΩ	½		D13-133	M-60-Z	Mike 3 Control
B	Shaft			A	NOT REQ	Attach to 42A Per Instructions
43A	500KΩ	½		D13-133	M-60-Z	Phono Control
B	Shaft			A	NOT REQ	Attach to 43A Per Instructions
44A	500KΩ	½		D13-133	M-60-Z	Treble Control
B	Shaft			A	NOT REQ	Attach to 44A Per Instructions
45A	500KΩ	½		D13-133	M-60-Z	Bass Control
B	Shaft			A	NOT REQ	Attach to 45A Per Instructions

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES	
	RESISTANCE	WATTS	MASCO PART No.	IRC PART No.		
46	15 Meg.	½		BTS-15 Meg.	Br.-Grn.-Blue	1st Mic Amp. Grid
47	15 Meg.	½		BTS-15 Meg.	Br.-Grn.-Blue	2nd Mic Amp. Grid
48	15 Meg.	½		BTS-15 Meg.	Br.-Grn.-Blue	3rd Mic Amp. Grid
49	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn.	1st Mic Amp. Screen
50	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn.	2nd Mic Amp. Screen
51	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn.	3rd Mic Amp. Screen
52	270KΩ	½		BTS-270K	Red-Vi.-Yl.	1st Mic Amp. Plate Load
53	270KΩ	½		BTS-270K	Red-Vi.-Yl.	2nd Mic Amp. Plate Load
54	270KΩ	½		BTS-270K	Red-Vi.-Yl.	3rd Mic Amp. Plate Load
55	270KΩ	½		BTS-270K	Red-Vi.-Yl.	Isolation
56	270KΩ	½		BTS-270K	Red-Vi.-Yl.	Isolation
57	270KΩ	½		BTS-270K	Red-Vi.-Yl.	Isolation
58	270KΩ	½		BTS-270K	Red-Vi.-Yl.	Isolation
59	1500Ω	½		BTS-1500	Br.-Grn.-Red	Mixer Cathode
60	100KΩ	½		BTS-100K	Br.-Blk.-Yl.	Mixer Plate Load
61	100KΩ	½		BTS-100K	Br.-Blk.-Yl.	Mixer Plate Decoup
62	270KΩ	½		BTS-270K	Red-Vi.-Yl.	Tone Comp.
63	47KΩ	½		BTS-47K	Yl.-Vi.-Or.	Tone Comp.
64	2200Ω	½		BTS-2200	Red-Red-Red	1st AF Cathode
65	47KΩ	½		BTS-47K	Yl.-Vi.-Or.	1st AF Plate Load
66	47KΩ	½		BTS-47K	Yl.-Vi.-Or.	Decoup.
67	270KΩ	½		BTS-270K	Red-Vi.-Yl.	2nd AF Grid
68	1500Ω	½		BTS-1500	Br.-Grn.-Red	2nd AF Cathode
69	100KΩ	½		BTS-100K	Br.-Blk.-Yl.	2nd AF Plate Load
70	6800Ω	½		BTS-6800	Blue-Gray-Red	Phase Inverter Grid
71	1500Ω	½		BTS-1500	Br.-Grn.-Red	Phase Inverter Cathode
72	100KΩ	½		BTS-100K	Br.-Blk.-Yl.	Phase Inverter Plate Load
73	270KΩ	½		BTS-270K	Red-Vi.-Yl.	Feedback
74	100KΩ	½		BTS-100K	Br.-Blk.-Yl.	Output Grid
75	100KΩ	½		BTS-100K	Br.-Blk.-Yl.	Output Grid
76	200Ω	10		AB-200		Output Cathode
77	12KΩ	½		BTS-12K	Br.-Red-Or.	Decoup.
78	2500Ω	10		AB-2500		Filter
79	10KΩ	20		DG-10K		Bleeder
80	75Ω	1		BW-1-68	Vi.-Grn.-Blk.	Hash Supp.
81	10KΩ	½		BTS-10K	Br.-Blk.-Or.	Feedback

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA		INSTALLATION NOTES
				MASCO PART No.	RADIART PART No.	
82	INT.	6.3 VDC	60~	491		

TRANSFORMER (POWER)

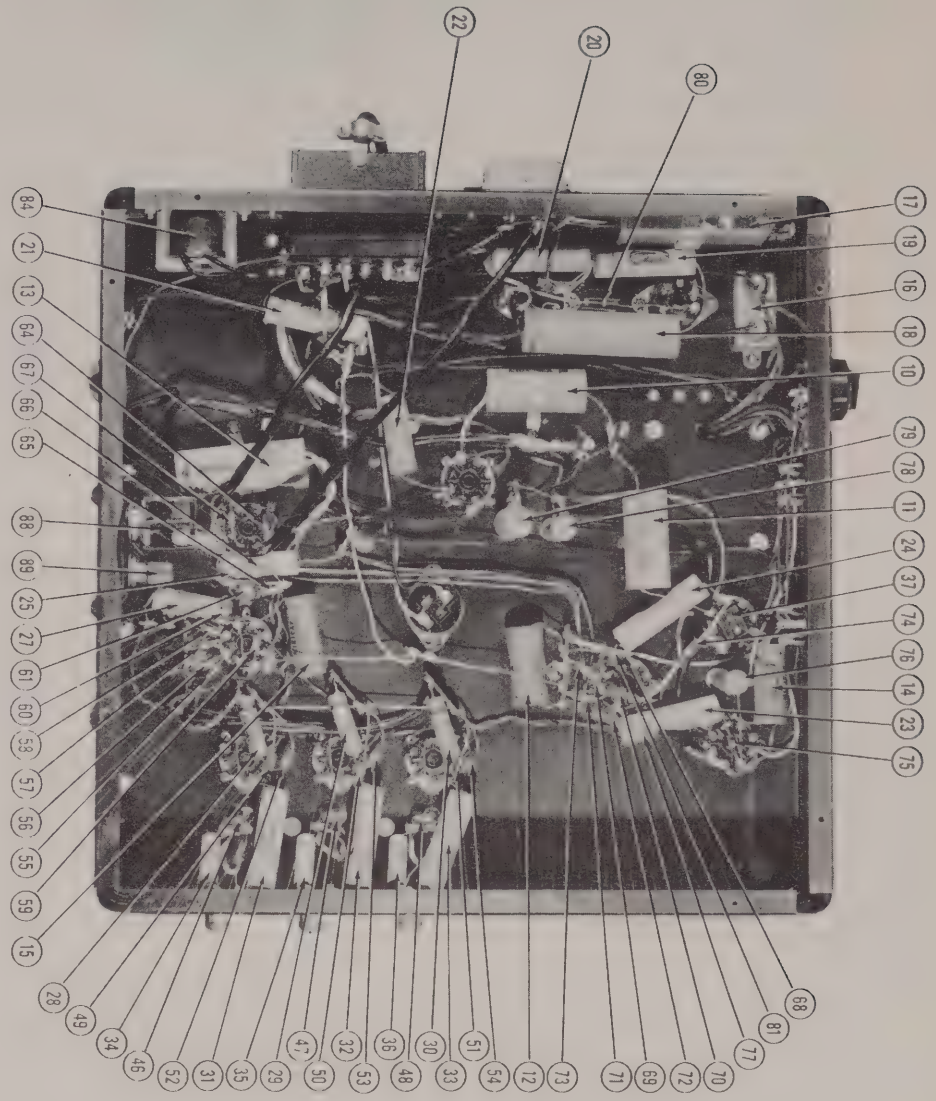
ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MASCO PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
83	117 VAC @ 1.1A or 6.3 VDC @ 9.4A	720VCT .15ADC	5.4VAC @2.0A	6.7VAC @3.65A	P-25M			

FILAMENT CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE @ CURRENT 1000~	MASCO PART NO.	STANCOR PART NO.	THORDARSON PART NO.	MERIT PART No.	
84	2.0A	.1Ω	2.5MH	C-25M				

DATE 3/49 #495-11 SET #57 FOLDER #11

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MASCO PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
85	7000Ω CT	4Ω 8Ω 15Ω 125Ω 250Ω 500Ω	205Ω CT	.4Ω .5Ω .8Ω 10Ω 14Ω 20Ω	T-25	A-3801	T22S68	A-3130	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					MASCO PART No.		
86	Bayonet	6-8V	0.15A	Brown			Type #47
87	Bayonet	6-8V	0.15A	Brown			Type #47

MISCELLANEOUS

ITEM No.	PART NAME	MASCO PART No.	NOTES
88	Switch		Power On-Off
89	Switch		Stand By
90	Switch		Impedence Selector
91	Fuse		3 Amp. (3AG)
92	Fuse		30 Amp. (4AG)

SPEAKERS

1. (a) This amplifier is designed for use with PM speakers or PM re-entrant horns only. If electro-dynamic speakers are to be used a separate exciter supply must be employed.

   (b) Determine the number of speakers required and select the desired types. Make sure that the sum of the power ratings of the speakers selected is approximately equal to the rated output of the amplifier, namely 35 watts. For example: If the speakers are rated at 5 watts each, 7 speakers are required for a 35 watt amplifier.

2. (a) Connect the speakers or speaker lines to the output sockets through the use of one or two six-prong plugs. Pins #2 & #5 of the plugs should be used for the connections. Note that both output sockets are internally connected in parallel.

   (b) For running voice coil cables use wire #18 or heavier, twisted or parallel. For cable lengths exceeding 75 feet use the "line" impedance taps and employ "line" matching transformers on the speakers.

3. Select the proper output impedance by rotating the impedance selector until the desired impedance tap is visible through the small opening in the selector.

   DO NOT ROTATE THE SELECTOR WHILE THE AMPLIFIER IS OPERATING.

   The proper impedance tap to be used is determined by the impedance of the speakers, the number of speakers or lines and method of connection. The tap setting for speakers (or lines) of the same impedance connected in parallel is equal to the impedance of one speaker or line divided by the total number of such speakers (or lines). Thus two 15 ohm trumpet speakers in parallel should be connected to 15/2 = 7½ ohms (use 8 ohm setting). Similarly two 500 ohm lines in parallel are connected to 250 ohms. In series operation of equal impedances the net impedance is equal to the impedance of one speaker or line times the total number. Thus four 4 ohm speakers in series equal 16 ohms (use 15 ohm tap).

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6J7	0V	2.6VAC	19VDC	25VDC	0V	0V	3.9VAC	0V
2	6J7	0V	2.6VAC	19VDC	25VDC	0V	0V	3.9VAC	0V
3	6J7	0V	2.6VAC	19VDC	25VDC	0V	0V	3.9VAC	0V
4	6SC7	0V	90VDC	0V	0V	90VDC	1.1VDC	3.9VAC	3.3VAC
5	6J7	0V	2.6VAC	75VDC	75VDC	75VDC	140VDC	3.9VAC	2.9VDC
6	6SL7GT	0V	160VDC	1.2VDC	0V	140VDC	1VDC	3.9VAC	3.3VAC
7	6L6G	0V	2.6VAC	408VDC	310VDC	0V	0V	3.9VAC	23.5VDC
8	6L6G	0V	2.6VAC	408VDC	310VDC	0V	0V	3.9VAC	23.5VDC
9	5V4G	0V	410VDC	0V	360VAC	0V	360VAC	0V	410VDC

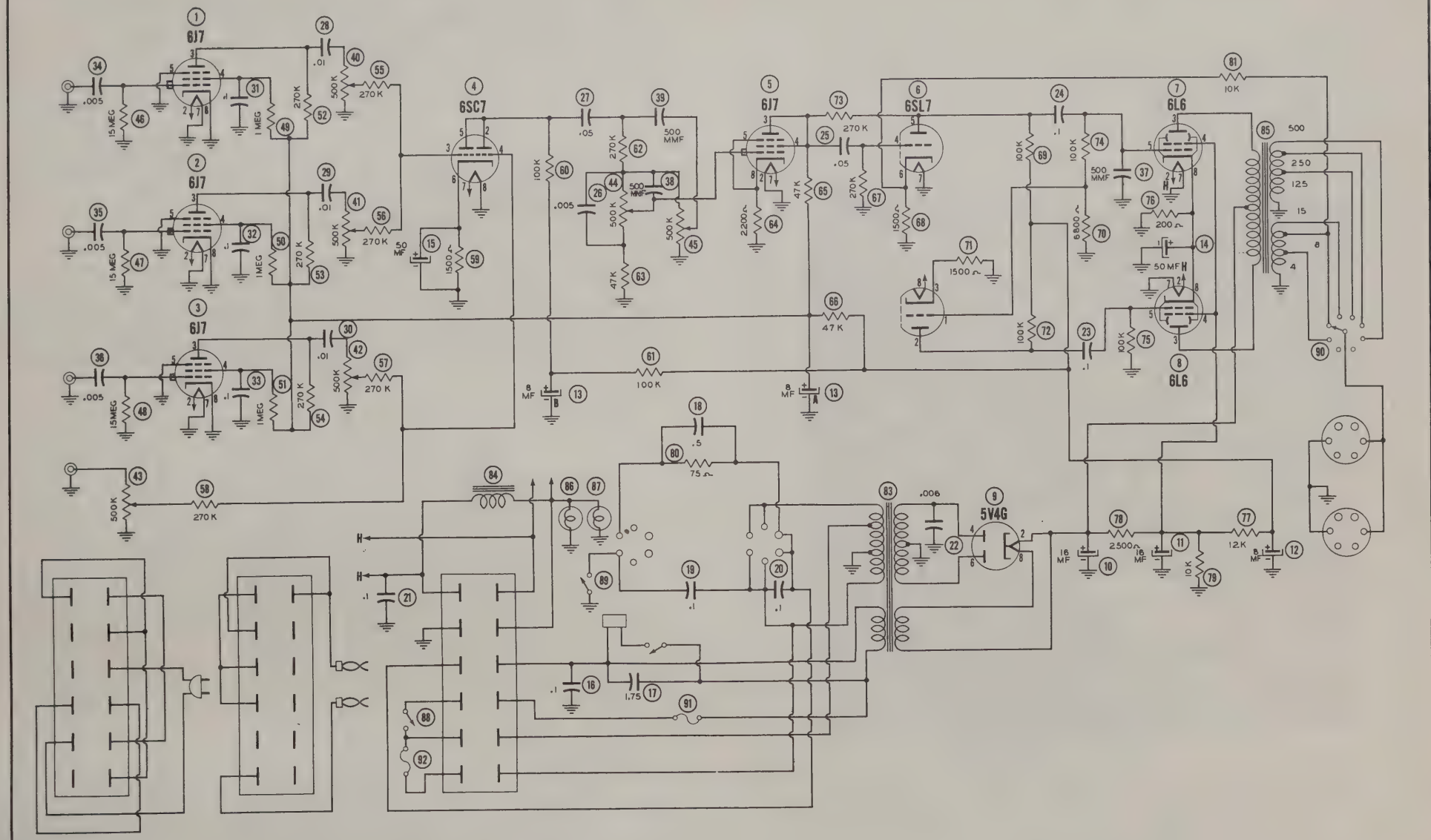
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6J7	0Ω	.05Ω	340KΩ	1.1Meg.	0Ω	Inf.	.05Ω	0Ω
2	6J7	0Ω	.05Ω	340KΩ	1.1Meg.	0Ω	Inf.	.05Ω	0Ω
3	6J7	0Ω	.05Ω	340KΩ	1.1Meg.	0Ω	Inf.	.05Ω	0Ω
4	6SC7	0Ω	170KΩ	1.4Meg.	2Meg.	170KΩ	1.5KΩ	.05Ω	.05Ω
5	6J7	0Ω	.05Ω	110KΩ	110KΩ	110KΩ	120KΩ	.05Ω	2.2KΩ
6	6SL7GT	6.8KΩ	120KΩ	1.5KΩ	270KΩ	120KΩ	1.5KΩ	.05Ω	.05Ω
7	6L6G	0Ω	.05Ω	13KΩ	10KΩ	100KΩ	Inf.	.05Ω	200Ω
8	6L6G	0Ω	.05Ω	13KΩ	10KΩ	100KΩ	0Ω	.05Ω	200Ω
9	5V4G	Inf.	13KΩ	Inf.	45Ω	Inf.	48Ω	Inf.	13KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt: AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

DATE 3/49 #495-11 SET #57 FOLDER #11



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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OLDSMOBILE
MODEL 982420

OLDSMOBILE
MODEL 982420

OLDSMOBILE, MODEL 982420

TRADE NAME	Oldsmobile, Model 982420
SUPPLIER	Oldsmobile Motors, Div. of General Motors Corp., Detroit, Mich.
TYPE SET	Battery Operated Custom Built Automotive Superheterodyne Receiver.
TUBES (SEVEN)	Types 7A7 RF Amp., 7Q7 Converter, 7A7 IF Amp., 7E6 Det.-AVC-AF, (2) 7C5 Power Output, 0Z4 or 7Z4 Rectifier
POWER SUPPLY	6 Volt Storage Battery RATING 6.9 Amp. @ 6 Volts DC
TUNING RANGE—BROADCAST	535-1610 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

With receiver installed in car, and antenna fully extended, tune in weak station near 1400KC and adjust A6 for maximum volume.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High Side to Pin 6 (Grid) of 7Q7. Low Side to Chassis.	257.5KC	Tuning Slugs Fully Out.	Across Voice Coil	A1, A2 A3,A4	Adjust for maximum output.
2.	70MMFD	High Side to Ant. socket. Low side to Chassis.	1610 KC	Tuning Slugs Fully Out	Across Voice Coil.	A5, A6 A7, A8	Adjust for maximum output.

PUSHBUTTON ADJUSTMENT

1. Turn receiver on and allow it to warm up for fifteen minutes.
2. Make up a list of stations desired to be set up.
3. Tune in first selected station manually.
4. Pull button for this station slightly to the left and then out, then depress it to set.
5. Detune receiver with manual control and return with button.
6. If adjustment is incorrect, repeat steps 3 to 5.
7. To set up the remaining buttons, follow the procedure outlined above.

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PARTS LIST AND DESCRIPTIONS

OLDSMOBILE MODEL 982420

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: OLDSMOBILE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	7A7	7A7	8V	
2	Converter	7Q7	7Q7	8AL	
3	IF Amp.	7A7	7A7	8V	
4	Det-AVC.-AF	7E6	7E6	8W	
5	Power Output	7C5	7C5	6AA	
6	Power Output	7C5	7C5	6AA	
7A	Rectifier	0Z4	0Z4	4RM	
7B	Rectifier	7Z4	7Z4	5AB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: OLDSMOBILE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
8A	10	350	1218009	AF32K4A	UP1135C	DY-310	EL-153	■ Filter
B	15	350						▲ Filter
C	20	25						Cathode Bypass
9	10	25	J100	PRS25/10	BR102A	M-10-25	TA-10	AF Cathode Bypass
10	.004	1500	H402	1684-004	GT16D4	STM-16-004	TR-24	Buffer
11	.003	800	E302	1084-003	GT16D3	STM-16-003	TR-23	Output Plate Bypass
12	.2	200	7234127	484-2	GT2P25	ST-2-25	TC-2	Audio Coupling
13	.05	200	E503	484-05	GT2S5	ST-4-05	TC-15	Tone Comp.
14	.005	120	E502	484-005	GT6D5	ST-6-005	TC-25	Tone Comp.
15	.01	120	E103	484-01	GT2S1	ST-4-01	TC-11	Audio Coupling
16	.05	200	E503	484-05	GT2S5	ST-4-05	TC-15	Decoupling
17	.05	200	E503	484-05	GT2S5	ST-4-05	TC-15	AVC Filter
18	.0015	200	E102	484-002	GT6D2	ST-6-002	TC-22	Ant. Isolation
19	.01	100	E103	484-01	GT2S1	ST-4-01	TC-11	IF Cathode Bypass
20	500	500	G471	1468-0005	5W5T5	MO .5-35	1FM-35	AF Plate Bypass
21	50	500	G470	1469-00005	5R5Q5	MOS .5-45	MS-45	AVC Coupling
22	305	300	1217993					Fixed Trimmer
23	1100	500	1218015					Fixed Padder
24	50	500	G470	1468-00005	5W5Q5	MO .5-45	1FM-45	Osc. Grid Cap
25	10	500	G100	1468-00001	5W5Q1	MO .5-41	1FM-41	RF Coupling
26	150	500	G151	1469-00015	5R5T15	MOS .5-315		Fixed Trimmer

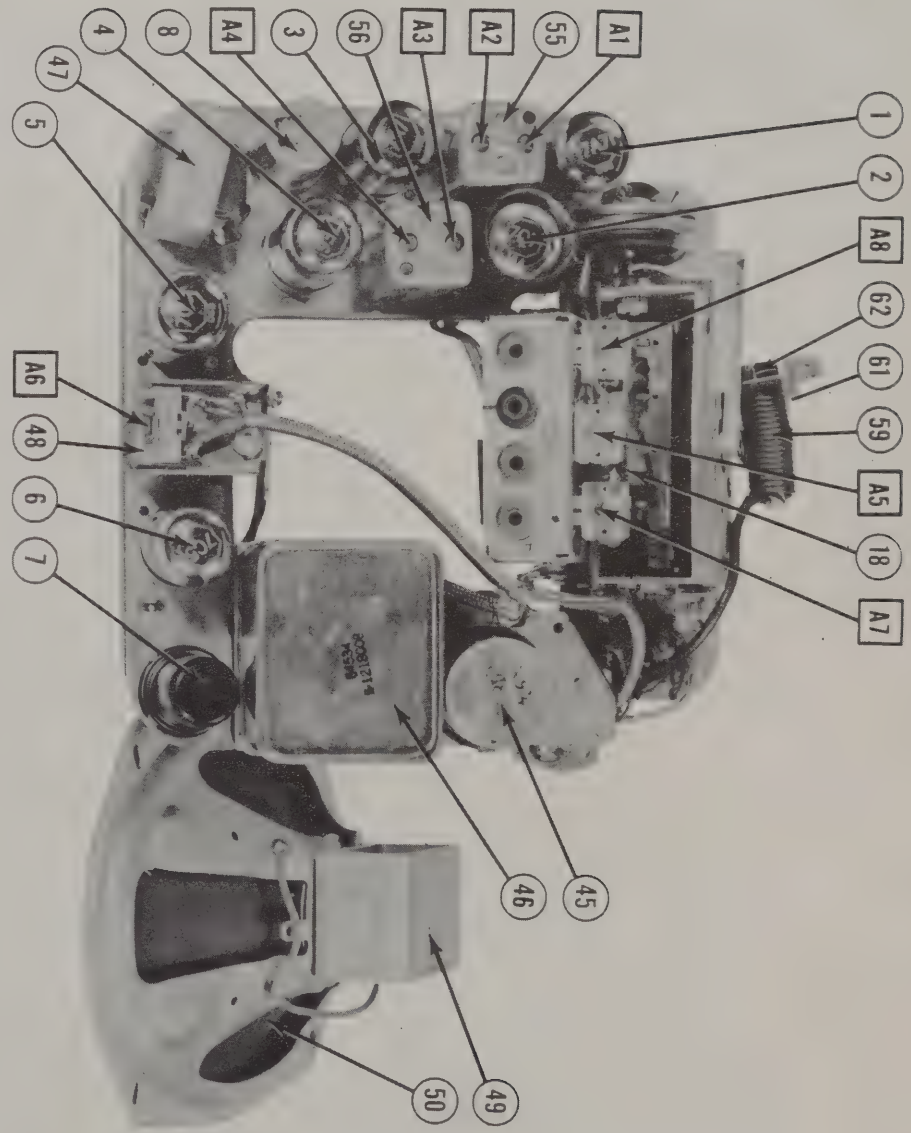
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: OLDSMOBILE PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	INSTALLATION NOTES
27A	1 Meg.	½	1218005			Volume Control } Ganged Together
B	30KΩ	½				Tone Control } Ganged Together
C	Switch					Power Switch } Ganged Together

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: OLDSMOBILE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES	
28	22KΩ	½	A223	BTS-22K	Red-Red-Or.	RF Plate
29	47KΩ	½	A473	BTS-47K	Yl.-Vi.-Or.	Osc. Grid
30	6.8 Meg.	½	A685	BTS-6.8 Meg.	Blue-Gray-Grn.	Osc. Grid
31	33KΩ	½	A333	BTS-33K	Or.-Or.-Or.	Conv. Screen
32	1200Ω	½	A122	BTS-1200	Br.-Red-Red	IF Cathode
33	82KΩ	½	A823	BTS-82K	Gray-Red-Or.	Screen Dropping
34	3.3 Meg.	½	A335	BTS-3.3 Meg.	Or.-Or.-Grn.	Diode Load
35	220KΩ	½	A224	BTS-220K	Red-Red-Yl.	Isolation
36	1 Meg.	½	A105	BTS-1 Meg.	Br.-Blk.-Grn.	AVC Net.
37	1 Meg.	½	A105	BTS-1 Meg.	Br.-Blk.-Grn.	AVC Net.
38	56KΩ	½	A563	BTS-56K	Grn.-Blue-Or.	Tone Comp.
39	3900Ω	½	A392	BTS-3900	Or.-White-Red	AF Cathode
40	33KΩ	½	A333	BTS-33K	Or.-Or.-Or.	AF Plate Load
41	270Ω	1	B271	BW-1-270	Red-Vi.-Br.	Output Cathode
42	1800Ω	2	C182	BT-2-1800	Br.-Gray-Red	Filter
43	150Ω	1	B151	BW-1-150	Br.-Grn.-Br.	Hash Supp.
44	1 Meg.	½	A105	BTS-1 Meg.	Br.-Blk.-Grn.	Conv. Grid

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA: OLDSMOBILE PART No.	REPLACEMENT DATA: RADIART PART No.	INSTALLATION NOTES
45	INT.	6.0 VDC	115∿	1218006	5301	

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: OLDSMOBILE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDARSON PART No.	REPLACEMENT DATA: MERIT PART No.
46	6.0 VDC @ 4.1A	550VCT .065ADC			1218008			P-2971 #

Add separate filter if necessary.

FILTER CHOKE

ITEM NO.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000)	REPLACEMENT DATA: OLDSMOBILE PART NO.	REPLACEMENT DATA: STANCOR PART NO.	REPLACEMENT DATA: THORDARSON PART NO.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
47	0	3100Ω CT		1218029				

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: OLDSMOBILE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
48	10KΩ CT	3.7Ω	465Ω CT	.9Ω	1218059			A-2936*	* Remove Frame and use original.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: OLDSMOBILE PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	INSTALLATION NOTES
	FIELD	V C Imp.				
49	PM	3.7Ω	1218060		69A3	
	CONE DIA	V C DIA				
50	6 X 9 IN	1 IN				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: OLDSMOBILE PART No.	REPLACEMENT DATA: MEISSNER PART No.	
51	Ant. Coil		8.6Ω			
52	Preselector Coil		9.5Ω			Items 51 to 54 are slug tuned and ganged, may be obtained under part No. 1218010.
53	RF Coil		8.5Ω			
54	Osc. Coil		3.5Ω			
55	Input IF	52Ω	52Ω	1218033		
56	Output IF	54Ω		1218035		
57	RF Choke		7.5Ω	1214382		
58	Fil. Choke		1Ω	1217996		
59	Spark Chk.		1.4Ω	1217995		

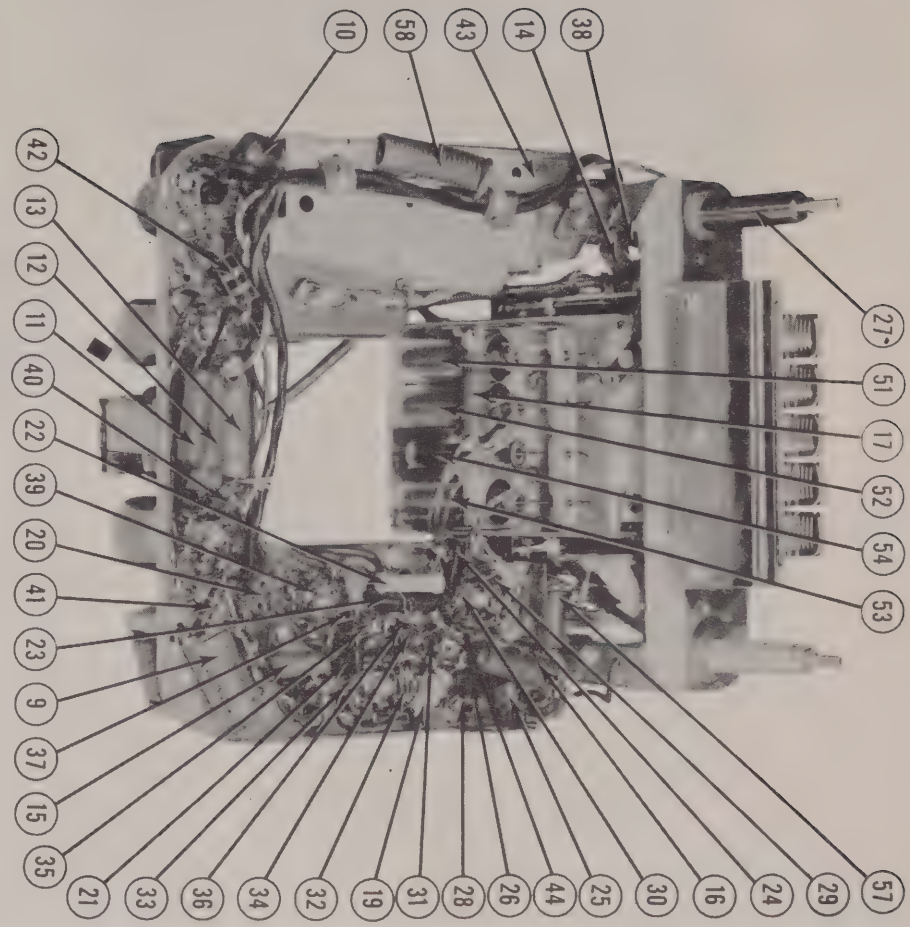
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: OLDSMOBILE PART No.	REPLACEMENT DATA	INSTALLATION NOTES
60	Bayonet	6-8V	0.2A	White			Type #51

MISCELLANEOUS

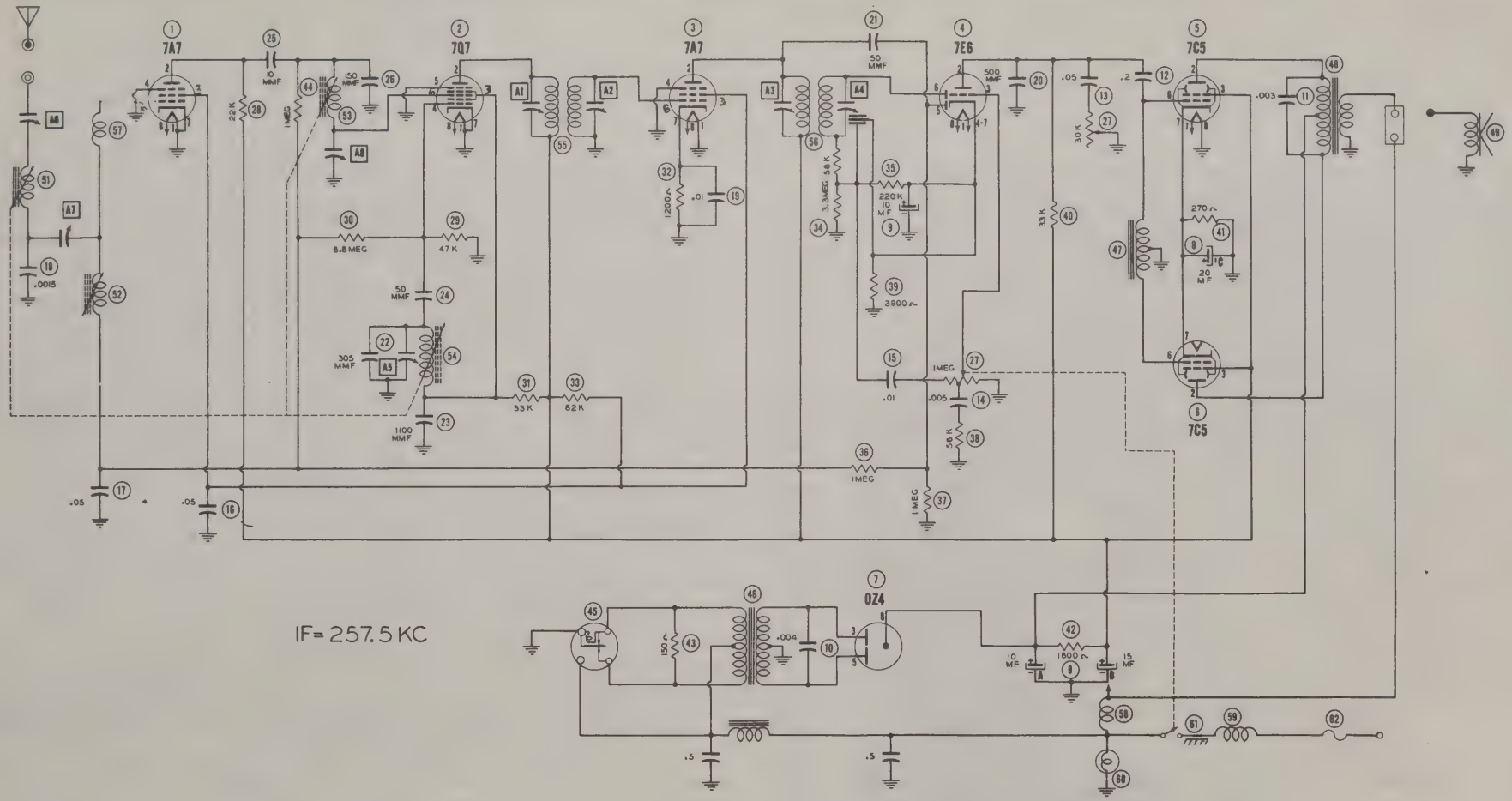
ITEM No.	PART NAME	OLDSMOBILE PART No.	NOTES
61	Spark Plate	1212278	
62	Fuse		15 Amp.
A5	Trimmer	1218043	Osc. Adj.
A6	Trimmer	1218002	Ant. Adj.
A7	Trimmer	1218047	Ant. Adj.
A8	Trimmer	1218046	RF Adj.
	Dial Glass	1208004	
	Pointer	1218030	Includes Slide Assby

CHASSIS—BOTTOM VIEW



OLDSMOBILE MODEL 982420

OLDSMOBILE MODEL 982420



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7A7	0V	105VDC	65VDC	0V	0V	-.3VDC	0V	6VDC
2	7Q7	0V	205VDC	70VDC	6-10VDC	0V	-.2VDC	0V	6VDC
3	7A7	0V	205VDC	65VDC	0V	0V	0V	3.6VDC	6VDC
4	7E6	0V	150VDC	0V	7.3VDC	2.6VDC	-.2VDC	7.3VDC	6VDC
5	7C5	6VDC	230VDC	205VDC	150VDC	0V	0V	13VDC	0V
6	7C5	6VDC	230VDC	205VDC	235VDC	0V	0V	13VDC	0V
7	0Z4	0V	0V	275VAC	0V	275VAC	0V	6VDC	235VDC

‡TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7A7	0Ω	140KΩ	200KΩ	0Ω	0Ω	1.5 Meg.	0Ω	.1Ω
2	7Q7	0Ω	120KΩ	120KΩ	47KΩ	0Ω	2.5 Meg.	0Ω	.1Ω
3	7A7	0Ω	120KΩ	200KΩ	0Ω	0Ω	5Ω	1.2KΩ	.1Ω
4	7E6	0Ω	150KΩ	0Ω	3.9KΩ	300KΩ	850KΩ	3.9KΩ	.1Ω
5	7C5	.1Ω	120KΩ	120KΩ	120KΩ	Inf.	155Ω	270Ω	0Ω
6	7C5	.1Ω	120KΩ	120KΩ	120KΩ	0Ω	155Ω	270Ω	0Ω
7	0Z4	0Ω	Inf.	30Ω	Inf.	31Ω	Inf.	.4Ω	120KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

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495-12

1. DC Voltage measurements are at 20,000 ohms per volt: AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 6 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

OLYMPIC MODELS 7-421V
7-421W, 7-421X

OLYMPIC MODELS 7-421V
7-421W, 7-421X

OLYMPIC MODEL 7-421W

TRADE NAME	Olympic, Models 7-421V, 7-421W, 7-421X
MANUFACTURER	Olympic Radio & Television Inc., 34-01 38th Ave., Long Island City, N.Y.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna.
TUBES (FIVE)	Types 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det-AVC-AF, 50L6GT Power Output 35Z5GT Rectifier.
POWER SUPPLY RATING	105-125 Volts AC-DC .27 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1700KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap. fully closed and set pointer horizontally and coinciding with the two horizontal reference marks on the dial.
Use isolation transformer if available. If not connect a .1 MFD cap. in series with low side of signal generator and B-.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD	High side to pin 8 12SA7. Low side to B-.	455KC	Tuning Cap. fully open	Across Voice Coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001 MFD to reduce hum modulation.
"	"	1700KC	1700KC	"	A5	Adjust for maximum output.
	Loop	1400KC	Tune for Max. output.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		OLYMPIC PART No.	STANDARD REPLACEMENT		
1	Converter	12SA7GT	12SA7GT	8AD	
2	IF Amp.	12SK7GT	12SK7GT	8N	
3	Det. AVC-AF	12SQ7GT	12SQ7GT	8Q	
4	Power output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	OLYMPIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	
6A	40	150		PRSA150/40-40	EDL4415	DSB-2X40-150	TA-440	Filter Red
B	40	150						Filter Blue
7	05	600		684-05	GT6S5	ST-6-05	TC-15	Line Filter
8	.1	400		484-1	GT4P1	ST-4-1	72P2	Line Isolation See note 1.
9	01	600		684-01	GT6S1	ST-6-01	TC-11	Output Plate Bypass
10	01	600		684-01	GT6S1	ST-6-01	TC-11	Audio Coupling
11	02	600		684-02	GT6S2	ST-6-02	TC-12	" " See note 2.
12	02	600		684-02	GT6S2	ST-6-02	TC-12	AVC Filter
13	02	400		484-02	GT4S2	ST-4-02	TC-12	Tuning Cap. Isolation See note 3
14	01	600		684-01	GT6S1	ST-6-01	TC-11	Ant. Coupling See note 3.
15	330	500		1468-0003	5W5T3	MO.5-33	1FM-33	AF Plate Bypass
16	100	500		1468-0001	5W5T1	MO.5-31	1FM-31	Diode Filter
17	100	500		1468-0001	5W5T1	MO.5-31	1FM-31	" "
18	100	500		1468-0001	5W5T1	MO.5-31	1FM-31	OSC Grid. Cap. See note 3.

Note 1 Wrap 12 turns insulated wire on replacement as on original.
Note 2 Some models use .01 MFD in this application.
Note 3 Not used in all models.

CONTROLS

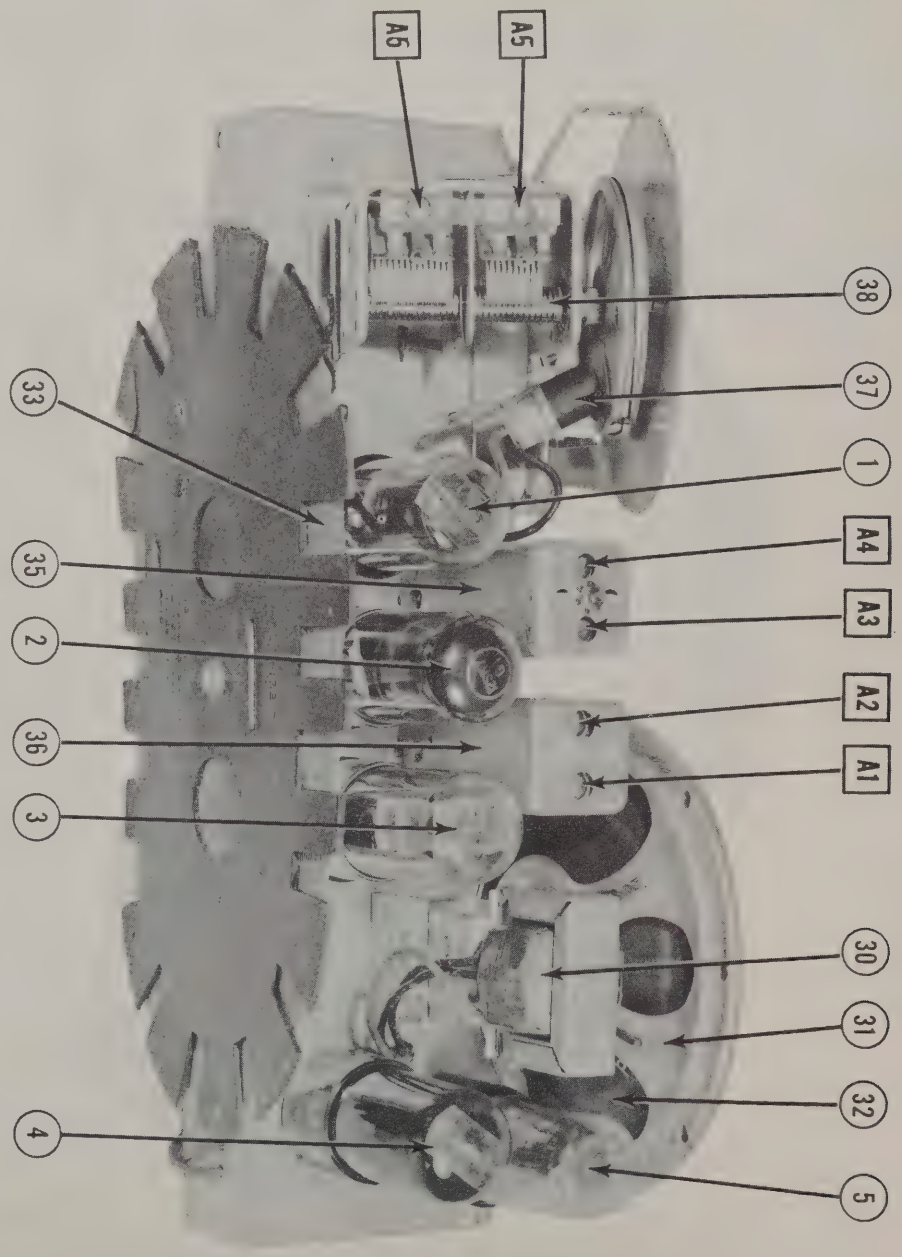
ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	OLYMPIC PART No.	IRC PART No.	CLAROSTAT PART No.	
19A	500KΩ	½	PT-102	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	E	KSS-3	Attach to 19A Per Instructions.
C	Switch		" "	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES		
	RESISTANCE	WATTS	OLYMPIC PART No.	IRC PART No.			
20	22KΩ	½	REB-223M	BTS-22K	Red-Red-Or.	OSC. Grid.	
21	3.3 Meg.	½		BTS-3.3Meg.	Or.-Or.-Grn.	AVC Network	See note 1
22	47KΩ	½		BTS-47K	Yl.-Vi.-Or.	Diode Filter	
23	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vi.-Grn.	AF Grid.	See note 2
24	470KΩ	½	REB-474M	BTS470K	Yl.-Vi.-Yl.	AF Plate Load	
25	470KΩ	½	REB-474M	BTS470K	YL.-Vi.-Yl.	Output Grid.	
26	150Ω	½	REB-151K	BTS-150	Br.-Grn.-Br.	Output Cathode	
27	220KΩ	½	REB-224M	BTS-220K	Red-Red-Yl.	Line Isolation	
28	1000Ω	2	RED-102M	BT-2-1000	Br.-Blk.-Red	Filter	
29	220Ω	1	REC-221K		Red-Red-Br.	Rectifier Ballast	

Note 1 Some Models use 2.2 Meg.Ω Resistor in this application.
Note 2 Some Models use 6.8 Meg.Ω Resistor in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		OLYMPIC PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
30	2200Ω	3.6Ω	130Ω Tap @ 6Ω	.6Ω		A-3330		A-3031	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			OLYMPIC PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	VC IMP.		ST-105		
31	PM	3.6Ω	SK-838	Mod. P5-X *	5A1 #	* Drill and tap magnet frame.
	CONE DIA	VC DIA				# Drill new mounting holes.
32	4½"	9/16"				

R F COILS

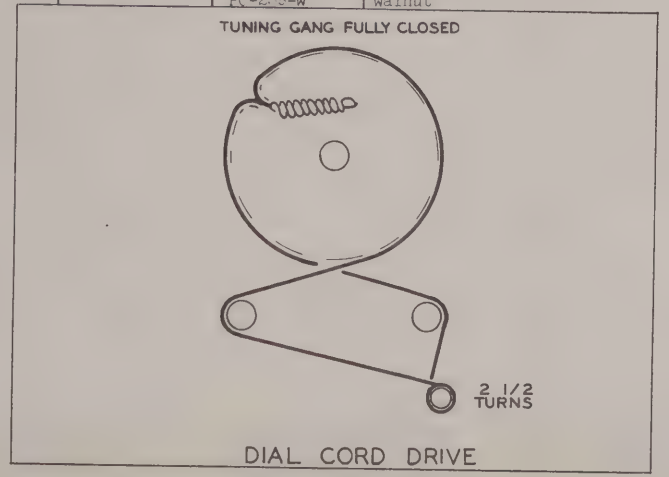
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	OLYMPIC PART No.	MEISSNER PART No.	
33	Loop Ant.		4Ω	LP-163-1		
34A	OSC Coil	1Ω	7Ω	CL-869		
B	OSC Coil			CL-575		
35	Input IF	19Ω	19Ω	TR-707	16-6666	
36	Output IF	22Ω	21Ω	TR-708	16-6667	

DIAL LIGHT

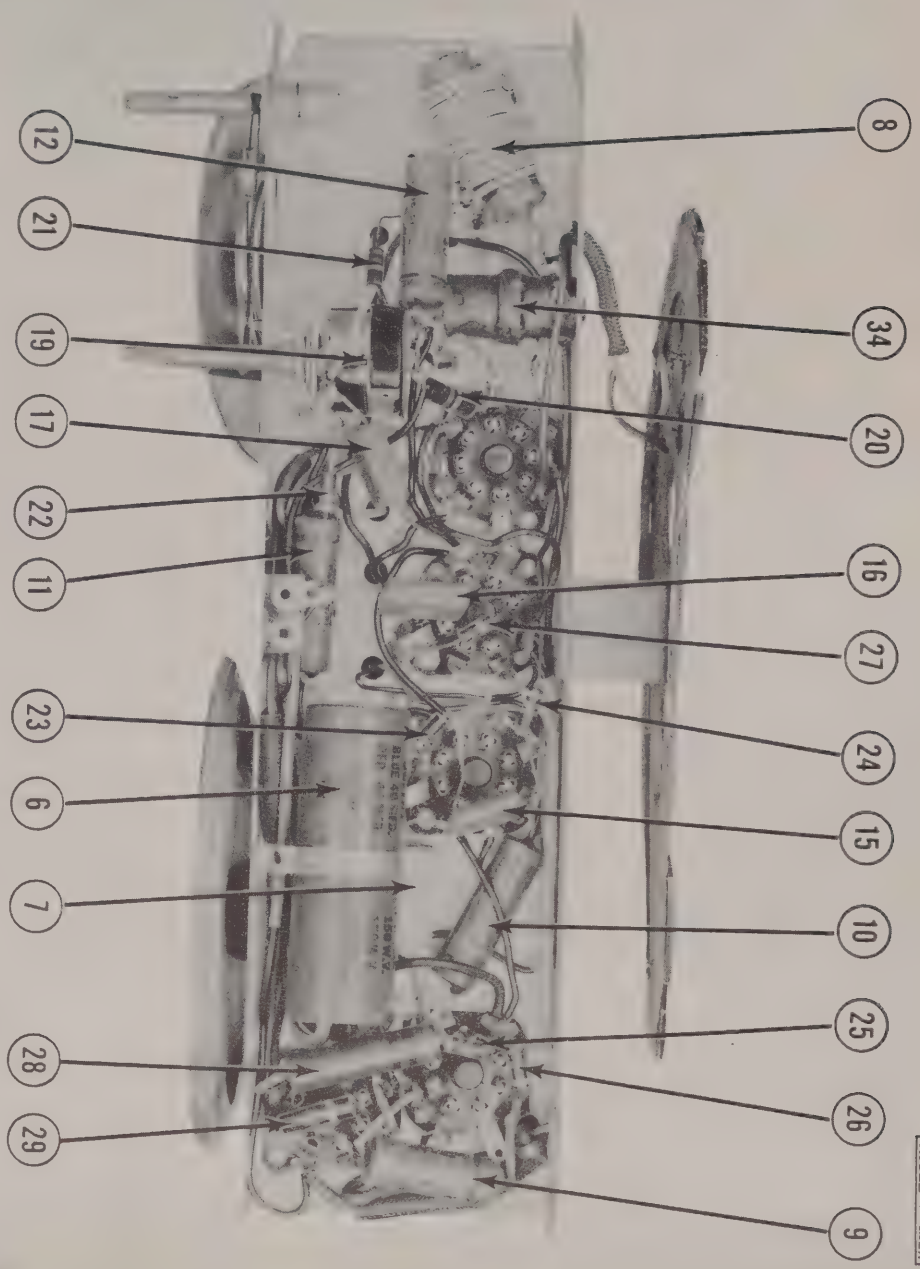
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					OLYMPIC PART No.		
37	Bayonet	6-8V	.15A	Brown	BU-187		Type #47

MISCELLANEOUS

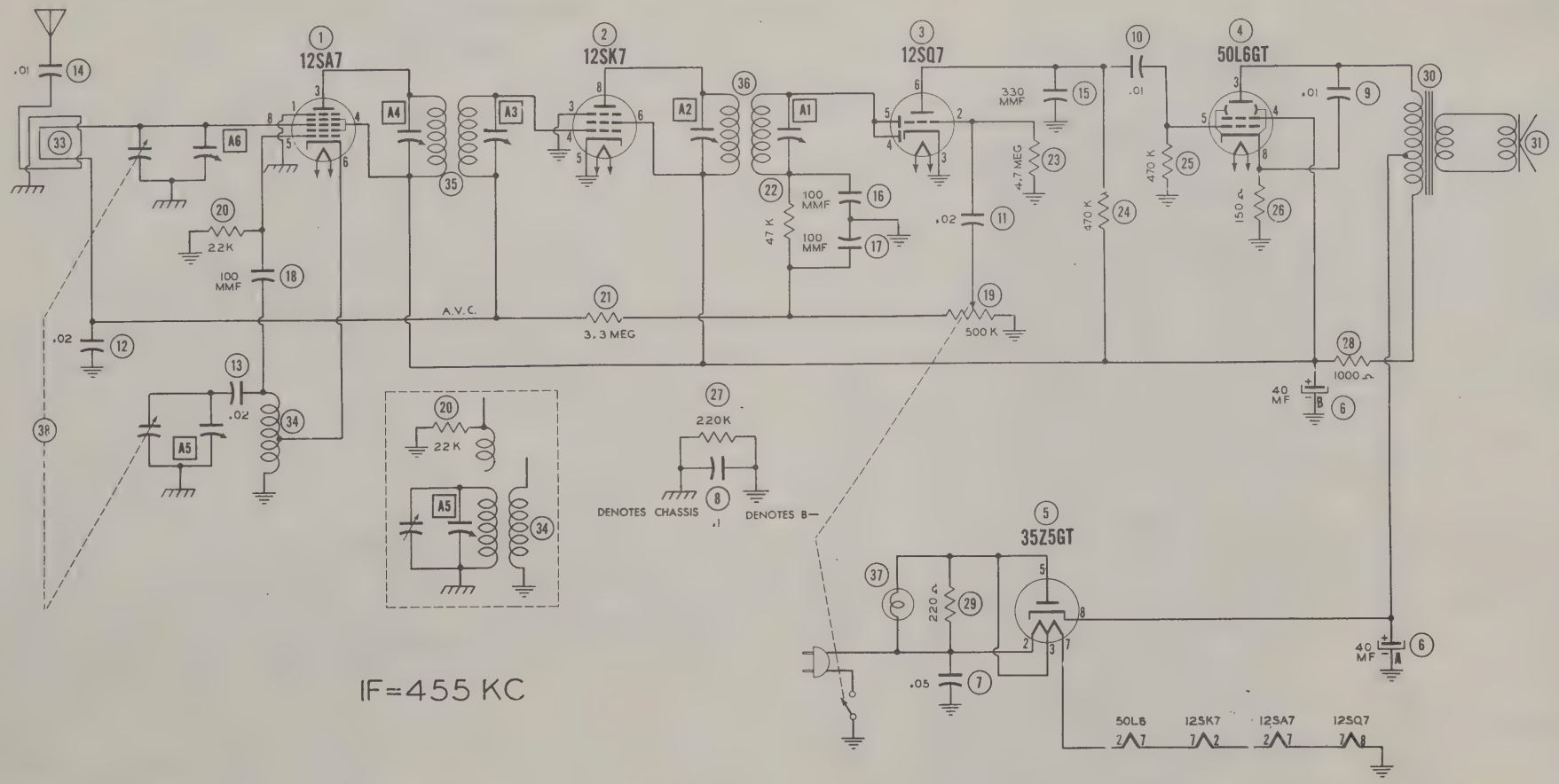
ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
38	2 Gang Var. Cap.	CV-801	(21-452 MMF, 30-200 MMF.)
	Dial	DL-1207	
	Knob	KN-382	Walnut
	"	KN-353	Ivory
	Dial Pointer	PO-256-V	Ivory
	" "	PO-256-W	Walnut



CHASSIS—BOTTOM VIEW



OLYMPIC MODEL 7-421W



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	0V	26VAC	95VDC	93VDC	§-8.2VDC	0V	12.5VAC	-.5VDC
2	12SK7	0V	26VAC	0V	-.5VDC	0V	93VDC	38.5VAC	93VDC
3	12SQ7	0V	-.9VDC	0V	-.7VDC	-.7VDC	45VDC	12.5VAC	0V
4	50L6-GT	0V	85VAC	112VDC	92VDC	0V	0V	38.5VAC	6.3VDC
5	35Z5-GT	0V	117VAC	114VAC	0V	114VAC	117VDC	85VAC	117VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	200K	24Ω	*880Ω	850Ω *	23K	.6Ω	13Ω	4 Meg.
2	12SK7	200K	28Ω	0Ω	4 Meg.	0Ω	*850Ω	40Ω	*880Ω
3	12SQ7	200K	6 Meg.	0Ω	600K	600K	*490K	13Ω	0Ω
4	50L6-GT	Inf.	85Ω	*130Ω	*850Ω	500K	0Ω	36Ω	150Ω
5	35Z5-GT	Inf.	110Ω	110Ω	0Ω	110Ω	200K	85Ω	250Ω

* MEASURED FROM PIN 8 OF 35Z5

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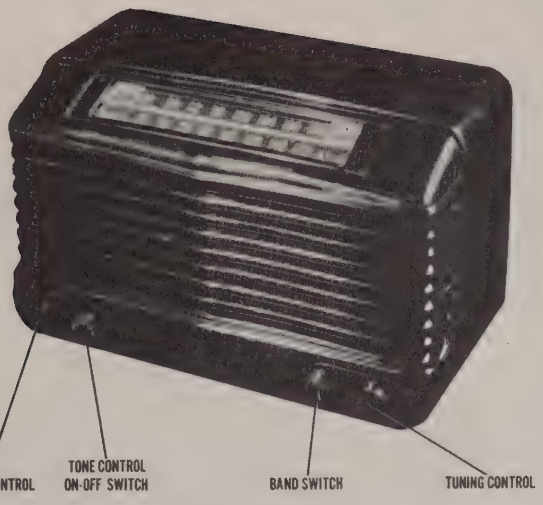
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



OLYMPIC MODEL 8-533W

TRADE NAME	OLYMPIC, Models 8-533V, 8-533W
MANUFACTURER	Olympic Radio & Television Inc., 34-01 38th Ave. Long Island City, N.Y.
TYPE SET	AC-DC Operated AM-FM Superheterodyne Reciever with Loop Antenna.
TUBES(SIX)	Types 14F8 FM Converter, 12SA7 AM Converter, 12SK7 IF Amp. 12SQ7 Det.-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC — RATING .16 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	530-1700KC — FREQ. MOD. 88-108MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer turn tuning cap fully closed and set pointer to last dot at low frequency end of dial backplate.
Use isolation transformer if available. If not, connect a .1 MFD cap. in series with low side of signal generator and chassis.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1 MFD	High side to pin 4 (Grid) of 12SK7 Low side to chassis.	455KC	AM (Counter clock-wise)	Tuning cap fully open	Across voice coil	A1, A2	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001 MFD to reduce hum modulation.
2.	.1 MFD	High side to pin 8 (Grid) of 12SA7 Low side to chassis.	455KC	AM (Counter clock-wise)	Tuning cap fully open	Across voicecoil	A3, A4	Adjustfor maximum output. Repeat steps 1&2 until no further improvement can be made.
3.		Loop	1700KC	AM (Counter clock-wise)	1700KC mark on dial back plate	Across voice coil	A5	Fashion loop of several turns of wire and radiate signal into loop of reciever. Adjust for maximum output.
4.		Loop	1400KC	AM (Counter clock-wise)	Tune for maximum output.	Across voice coil	A6	Adjust for maximum output
5.	300Ω Carbon resistor	High side to right hand Ext. FM Ant. terminal Low side to other Ext. FM Ant. term.	21.75MC (Unmodulated)	FM (Clock-wise)	Tuning cap fully open	Across voice coil	A7	Adjust for minimum output.
6.	300Ω Carbon resistor	High side to right hand Ext. FM Ant. terminal Low side to other Ext. FM Ant. term.	107 MC	FM (Clock-wise)	107MC mark on dial back plate	Across voice coil	A8	Adjust for minimum output.
7.	300Ω Carbon resistor	High side to right hand Ext. FM Ant. terminal Low side to other Ext. FM Ant. term.	103MC	FM (Clock-wise)	Tune for minimum output	Across voice coil	A9	Rock tuning Cap and adjust for minimum output.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	FM Converter	14F8	14F8	8BW	
2	AM Converter	12SA7	12SA7	8R	
3	IF Amp.	12SK7	12SK7	8N	
4	Det.-AVC-AF	12SA7	12SQ7	8Q	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

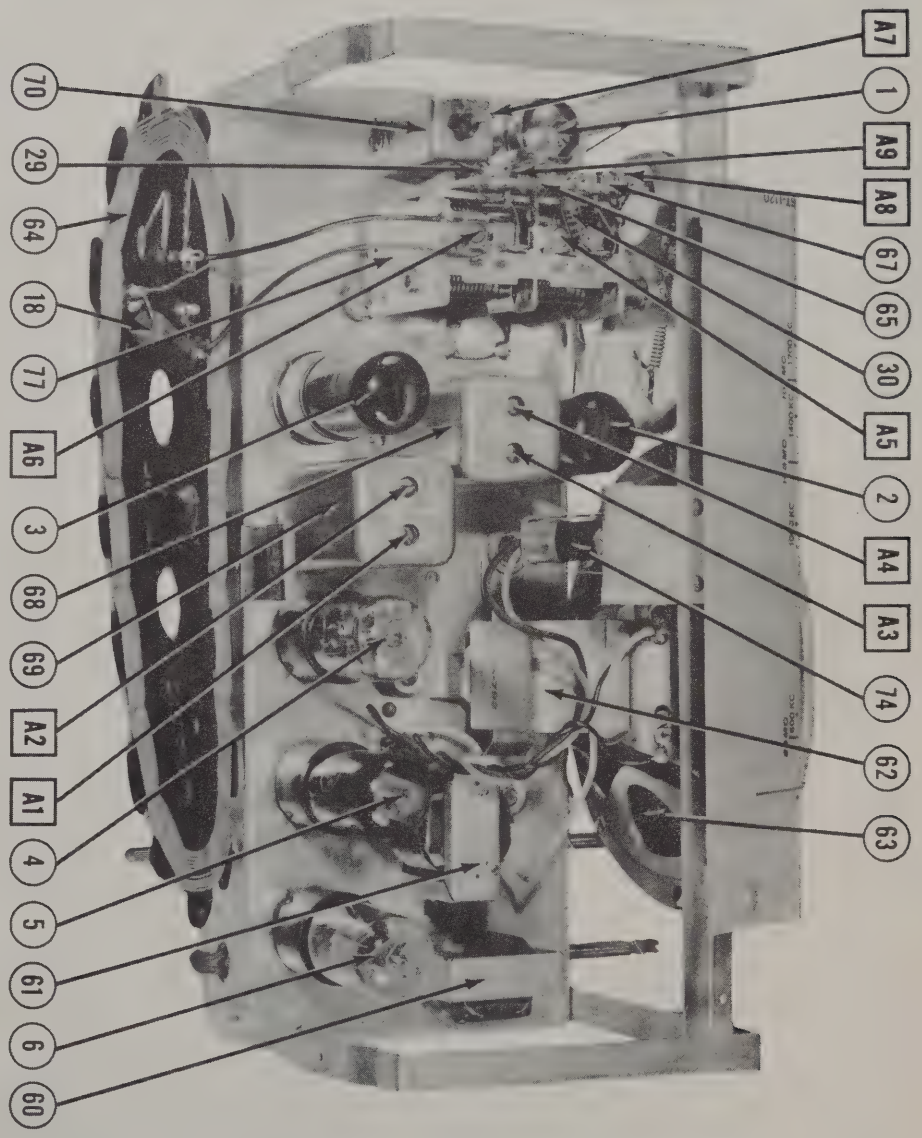
ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	CO-791	PRSA150/50-50	CZ44315C*	DSB-604020-150	TA-240	Filter-Blue
B	50	150					UT-501	Filter-Red
C	20	150		PRS150/20				Filter-Green
8	40	150	CO-1248	PRS150/40	BR4015	M-40-150	UT-401	Decoupling
9	10	25	CO-1133	PRS25/10	BR102A	M-10-25	TA-10	Stabilizing Cap.
10	50	25	CO-808	PRS25/50	BR502	M-50-25	TA-50	Output Cathode
11	05	600	RCP10W6503A	684-05	GT6S5	ST-6-05	TC-15	Line Filter
12	.1	200	RCP10W2104A	484-.1	GT2P1	ST-2-1	TC-1	RF Bypass Pwr.Supply
13	01	600	RCP10W6103A	684-01	GT6S1	ST-6-01	TC-11	Output Plate Bypass
14	02	600	RCP10W6203A	684-02	GT6S2	ST-6-02	TC-12	Audio Coupling
15	01	600	RCP10W6103A	684-01	GT6S1	ST-6-01	TC-11	Audio Coupling
16	01	600	RCP10W6103A	684-01	GT6S1	ST-6-01	TC-11	Audio Coupling
17	05	200	RCP10W2503A	484-05	GT2S5	ST-4-05	TC-15	AVC Filter
18	01	600	RCP10W6103A	684-01	GT6S1	ST-6-01	TC-11	Ant. Coupling
19	100	500	CCA-101M	1468-0001	5W5T1	MO.5-31	1FM-31	FM Ant. Coupling Cer.
20	500	500	CCA-501M	1468-0005	5W5T5	MO.5-35	1FM-35	Rectifier Bypass "
21	100	500	CCA-101M	1468-0001	5W5T1	MO.5-31	1FM-31	Filament Bypass NOTE "
22	330	500	RCM20A331M	1468-0003	5W5T3	MO.5-33	MS-33	Feedback
23	220	500	RCM20A221M	1468-00025	5W5T25	MO.5-325	1FM-325	AF Plate Bypass
24	1000	500	CCA-102M	1468-001	1W5D1	MW.5-21	1FM-21	De-emphasis Cer.
25	100	500	CCA-101M	1468-0001	5W5T1	MO.5-31	1FM-31	RF Coupling "
26	100	500	CCA-101M	1468-0001	5W5T1	MO.5-31	1FM-31	FM Ant. Isolation "
27	2	500	CO-1112					Ant. Coupling "
28	500	500	CCA-501M	1468-0005	5W5T5	MO.5-35	1FM-35	RF Coupling "
29	2	500	CO-1112					OSC Coupling "
30	50	500	CCA-U500S	1469-00005	5R5Q5	MOS.5-45	MS-45	Fixed Padder "
31	20	500	CCA-200M	1469-000025	5R5Q2	MOS.5-42	MS-42	OSC Grid. Cap. "
32	500	500	CCA-501M	1468-0005	5W5T5	MO.5-35	1FM-35	RF Bypass "
33	100	500	CCA-101M	1468-0001	5W5T1	MO.5-31	1FM-31	OSC Feedback "
34	30	500	CCA-L300K		5R5Q3	MOS.5-43	MS-43	Regen. Feedback "
35	30	500	CCA-L300K		5R5Q3	MOS.5-43	MS-43	Regen. Feedback "
36	5000	500	CCD-502X	1467-005	1D5D5	MW.5-25	1FM-25	RF Bypass Cer
37	2500	500	CCR-252M	1467-0025	1W5D25	MW.5-225		Quench Network "
38	10	500		1468-00001	5W5Q1	MO.5-41	1FM-41	Fixed Trimmer NOTE "

NOTE: Not used in all models.
* Omit bypass section.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	INSTALLATION NOTES
39A	2 Meg.	½	PT-105	D13-139	AM-66-Z	Volume Control
B	Shaft		Not Req.	E	KSS-3	Attach to 39A Per Instructions.
40A	500KΩ	½	PT-106	D13-133	AM-60-Z	Tone Control.
B	Shaft		Not Req.	E	KSS-3	Attach to 40A Per Instructions.
C	Switch		Not Req.	41	SW-A	" " "

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES		
	RESISTANCE	WATTS	OLYMPIC PART No.	IRC PART No.			
41	2.2 Meg.	½	REB-225M	BTS-2.2 Meg.	Red-Red-Grn.	AM Converter Grid.	
42	22KΩ	½	REB-223M	BTS-22K	Red-Red-Or.	AM Oscillator Grid	
43	2.2 Meg.	½	REB-225M	BTS-2.2 Meg.	Red-Red-Grn.	AVC Network	
44	470KΩ	½	REB-474M	BTS-470K	Yl.-Vi.-Yl.	Diode Load	
45	22KΩ	½	REB-223M	BTS-22K	Red-Red-Or.	FM Oscillator Grid.	
46	100Ω	½	REB-101M		Br.-Blk.-Br.	FM Oscillator Plate Decoupling	
47	15KΩ	½	REB-153M	BTS-15K	Br.-Grn.-Or.	FM IF Transformer Shunt	
48	180KΩ	½		BTS-180K	Br.-Gray-Yl.	Voltage Dropping	
49	1500Ω	½	REB-152M	BTS-1500	Br.-Grn.-Red	Quench Network	
50	22KΩ	½	REB-223M	BTS-22K	Red-Red-Or.	Converter Cathode	
51	100KΩ	½	REB-104M	BTS-100K	Br.-Blk.-Yl.	De-emphasis	
52	2200Ω	½	REB-222M	BTS-2200	Red-Red-Red	Decoupling	
53	10 Meg.	½	REB-106M	BTS-10 Meg.	Br.-Blk.-Blue	AF Grid.	
54	470KΩ	½	REB-474M	BTS-470K	Yl.-Vi.-Yl.	AF Plate Load	
55	150Ω	1	REC-151M	BW-1-150	Br.-Grn.-Br.	Output Cathode	
56	1 Meg.	½	REB-105M	BTS-1 Meg.	Br.-Blk.-Grn.	Feedback	
57	75Ω	2		BW-2-82	Vi.-Grn.-Blk.	Filament Dropping	See Note
58	100Ω	2	RED-101M	BW-2-100	Br.-Blk.-Br.	Pilot Light Shunt	
59	10Ω	½		BW-½-10	Br.-Blk.-Blk.	Audio Output Shunt	

NOTE: Some models use 2-150Ω 1 watt resistors in parallel. Replacement same as above.

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000)	OLYMPIC PART NO.	STANCOR PART NO.	THORDARSON PART NO.	MERIT PART No.	
60	.07A	145Ω	2 Henries	CK-114	C-2303#	T20C53#		#Drill new mounting hole.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		OLYMPIC PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
61	2200Ω	3.5Ω	140Ω	.5Ω	TR-904	A-3876‡	T22S45‡	A-2928‡	‡ Drill one new mounting hole.

SPEAKER

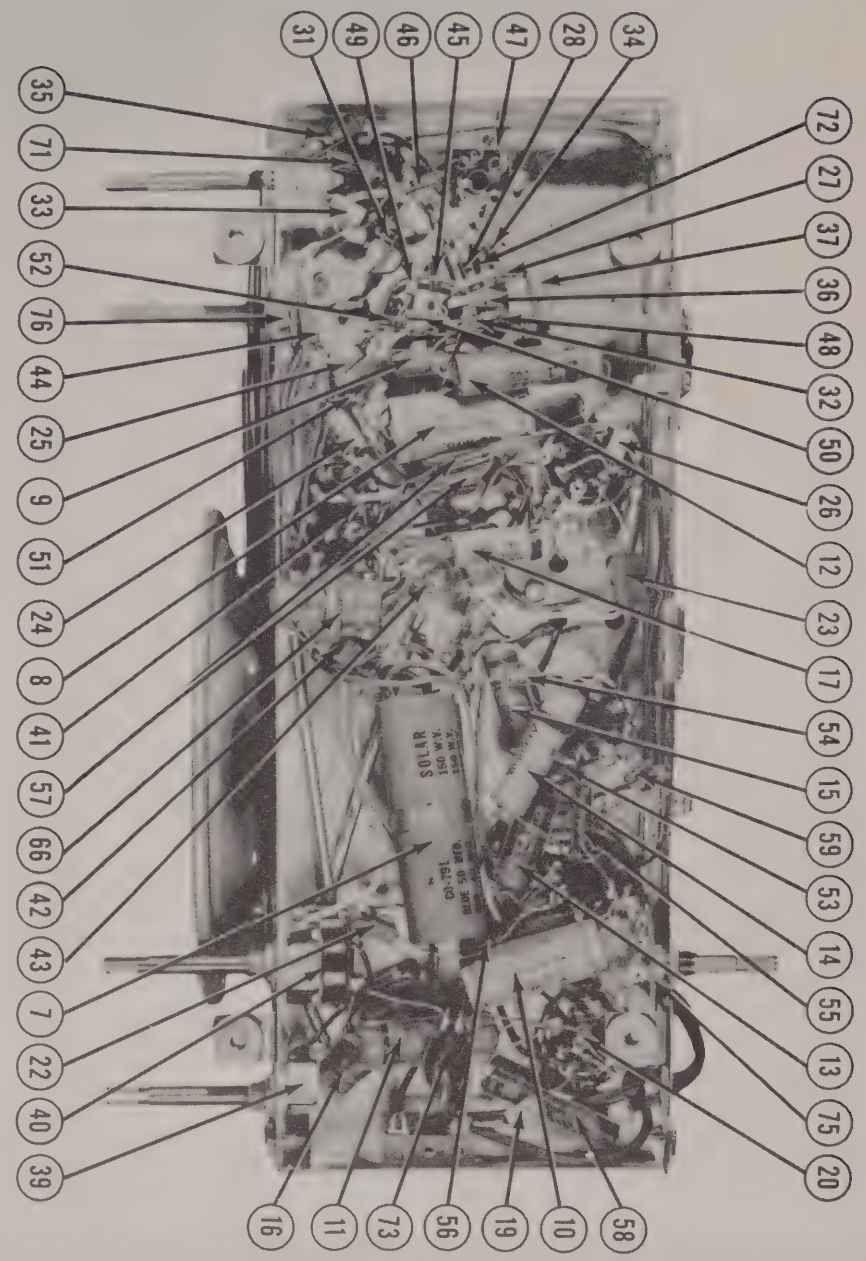
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			OLYMPIC PART No.	JENSEN PART No.	QUAM PART No.	
62	FIELD	VC IMP.	SK-792	ST-109 † Mod P6-W	6A21†	† Drill and tap magnet frame.
	PM	3.5Ω				
63	CONE DIA.	VC DIA.				
	6"	¼"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	OLYMPIC PART No.	MEISSNER PART No.	
64	Loop Ant.	.1Ω	1.2Ω	LP-1122		
65	FM Ant. Coil		0Ω	CL-1111		
66	OSC Coil-AM	.8Ω	7Ω	CL-1129§	14-1060	§ Add 50 MMFD cap. from high side of tuning cap. to OSC Grid.
67	OSC Coil-FM		0Ω	CL-1113		
68	Input IF	20Ω	20Ω	TR-781	16-6658	
69	Output IF	20Ω		TR-782	16-6670	
70	FM IF	2.9Ω	.5Ω	TR-1123		
71	RF Cath Chk		1.3Ω	CK-1127		
72	RF Choke		1.3Ω	CK-1127		
73A	Line Choke		0Ω	CK-1109		
B	Line Choke		0Ω			

DATE 3/49 #495-14 SET #57-FOLDER #14

CHASSIS—BOTTOM VIEW



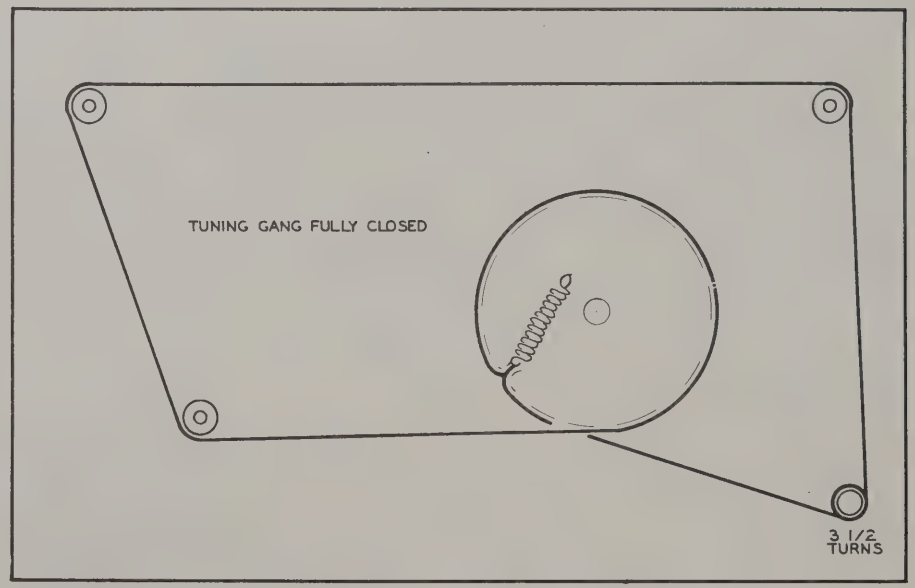
PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					OLYMPIC PART No.		
74	Bayonet	6.8V	0.15A	Brown	BU-137		Type 47

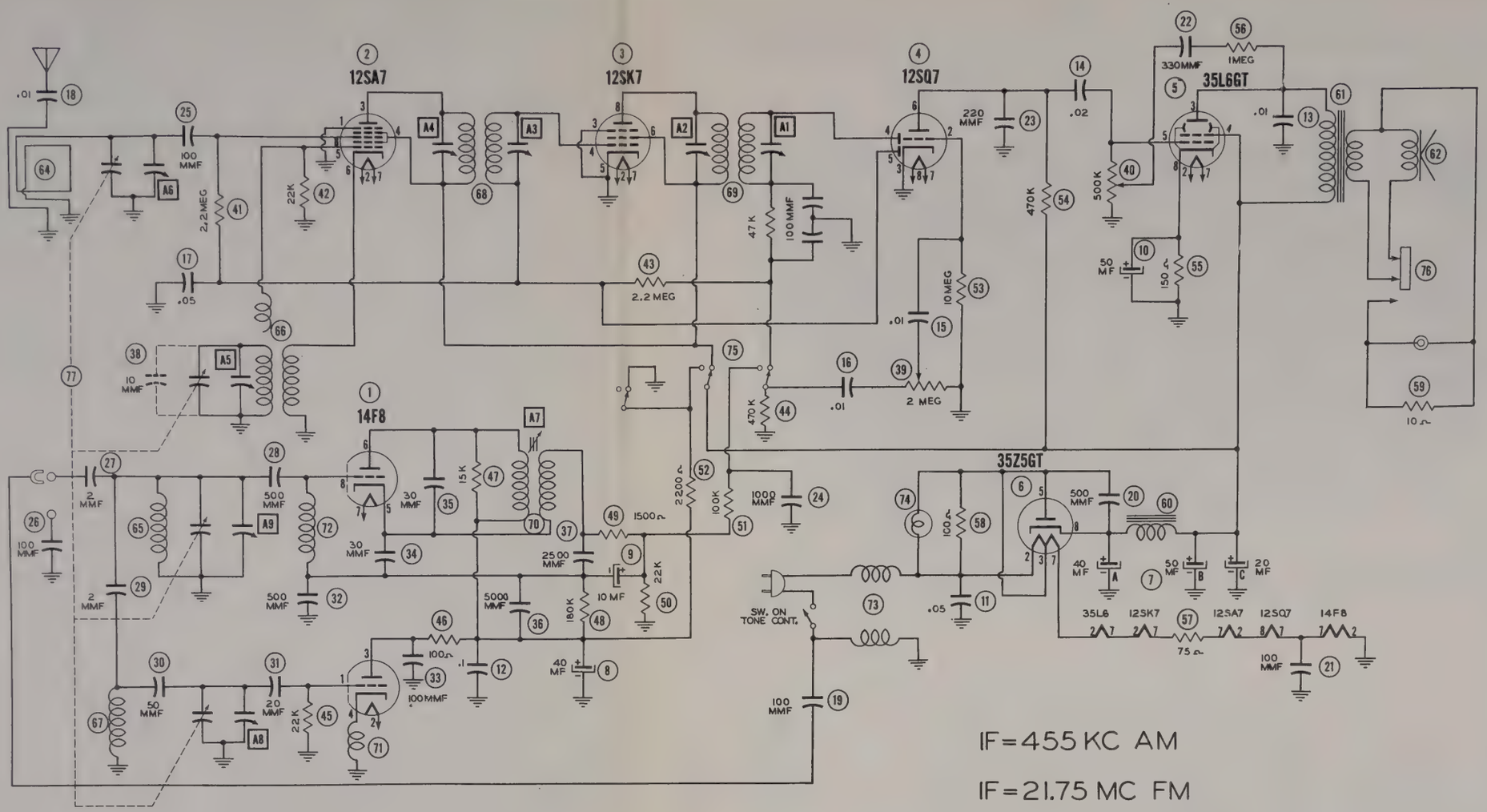
MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
75	Switch	SW-1121	AM-FM
76	2 Gang Var. Cap.	CV-841	(18-500MMF,35-212 MMF)
	Cabinet	CA-154-1W	Walnut
	Cabinet	CA-154-1V	Ivory
	Diffuser	ST-1120	Light Diffuser Plate



DIAL CORD DRIVE

DATE 3/49 #495-14 SET #57-FOLDER #14



VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.
RADIO-PHONO SWITCH IN RADIO POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
‡1	14F8	$-1VDC	0V	115VDC	0V	45VDC	110VDC	12VAC	30VDC
2	12SA7	0V	25VAC	115VDC	115VDC	$-6VDC	0V	38VAC	0V
3	12SK7	0V	60VAC	0V	-.6VDC	0V	115VDC	49VAC	115VDC
4	12SQ7	0V	-.7VDC	0V	-.6VDC	-.4VDC	55VDC	12VAC	25VAC
5	35L6GT	0V	95VAC	108VDC	115VDC	0V	0V	60VAC	6VDC
6	35Z5GT	0V	117VAC	114VAC	0V	114VAC	117VAC	95VAC	125VDC

$TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
‡1	14F8	22KΩ	0Ω	50KΩ	1.3Ω	24KΩ	50KΩ	12Ω	200KΩ
2	12SA7	0Ω	25Ω	50KΩ	50KΩ	22KΩ	18Ω	34Ω	4.9Meg.
3	12Sk7	0Ω	120Ω	0Ω	2.7Meg.	0Ω	50KΩ	105Ω	50KΩ
4	12SQ7	0Ω	10Meg.	0Ω	2.7Meg.	520KΩ	520KΩ	12Ω	25Ω
5	35L6GT	Inf.	150Ω	50KΩ	50KΩ	500KΩ	Inf.	120Ω	150Ω
6	35Z5GT	Inf.	190Ω	180Ω	Inf.	180Ω	190Ω	150Ω	50KΩ

‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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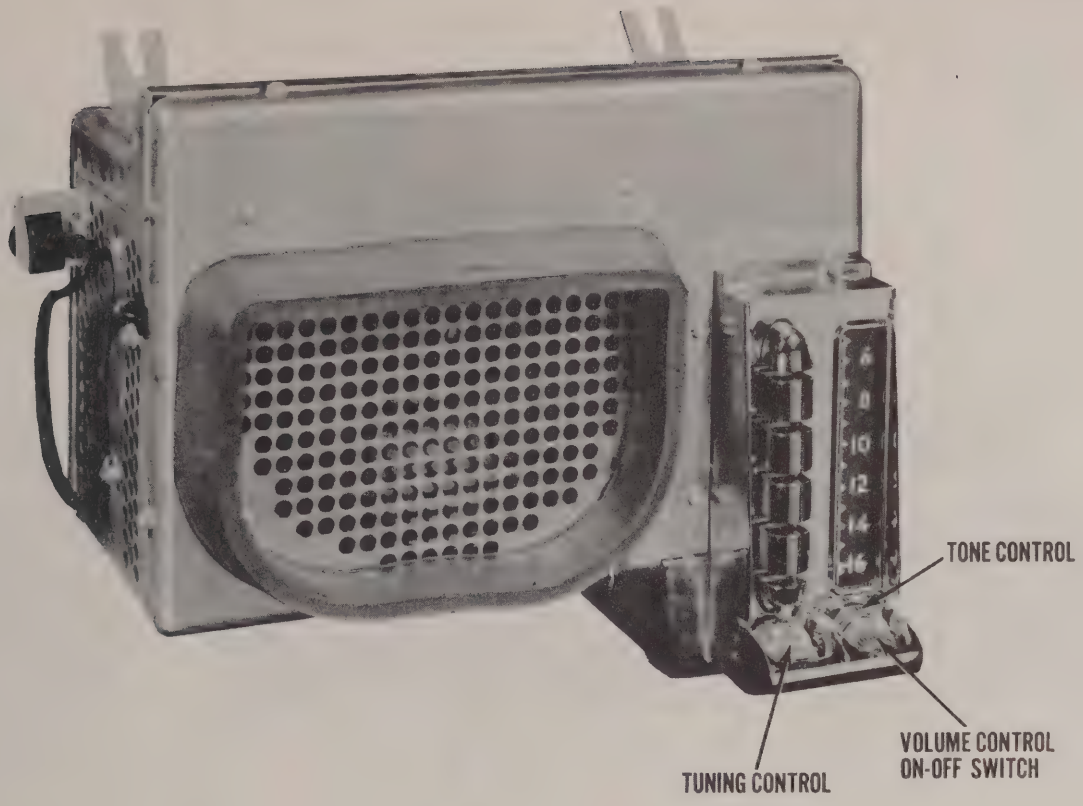
PACKARD MODEL PA-393607
(PHILCO MODEL P-4735)



PACKARD MODEL PA-393607
(PHILCO MODEL P-4735)

PACKARD Model PA 393607

TRADE NAME	Packard, Model PA 393607 (Philco Model P4735)
SUPPLIER	Packard Motor Car Co., 1580 E. Grand Blvd. Detroit, Mich.
TYPE SET	Battery Operated Custom Built Automotive Superheterodyne Receiver.
TUBES (EIGHT)	Types 7A7 RF Amp., 7B8 Converter, 7A7 IF Amp., 7B6 Det-AVC-MF, 7A4 Phase Inverter, (2) 7C5 Power Output, 7Y4 Rectifier.
POWER SUPPLY	6 Volt Storage Battery RATING 8.4 Amp. @ 6.6 Volts DC
TUNING RANGE--BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS--READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Either of two dummy antennas may be used: (1) a 22 MMFD Cap. in series with shielded aerial lead, or (2) a 22 MMFD Cap. in series with High side of signal generator and a 30 MMFD Shunt Cap. across across aerial socket.
To set pointer turn tuning knob until pointer stops at high frequency end of dial. Carefully bend pointer so that it coincides with 1600KC reference mark.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1 MFD	High side to Antenna socket. Low side to chassis.	265KC	Tuning slugs fully in forms	Across voice coil	A1, A2 A3, A4	Adjust for maximum output.
2.	See pre-alignment Notes.	High side to Antenna socket Low side to chassis.	1600KC	Tune for maximum output.	Across voice coil	A5	Adjust for maximum output.
3.	See pre-alignment Notes.	High side to Antenna socket Low side to chassis.	1400KC	1400KC	Across voice coil	A6	Adjust for maximum output.
4.	See pre-alignment Notes.	High side to Antenna socket Low side to chassis.	580KC	Tune for Maximum output.	Across voice coil	A7	Rock tuning control and adjust for maximum output. Repeat steps 2, 3, & 4 untill no further improvement can be made.

With receiver installed in car and Antenna fully extended, tune in weak station near 1400KC and adjust A8 for maximum volume.

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PACKARD PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	7A7	7A7	8V	
2	Converter	7B8	7B8	8X	
3	IF Amp.	7A7	7A7	8V	
4	Det-AVC-AF	7B6	7B6	8W	
5	Phase Inverter	7A4	7A4	5AC	
6	Power Output	7C5	7C5	6AA	
7	Power Output	7C5	7C5	6AA	
8	Rectifier	7Y4	7Y4	5AB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

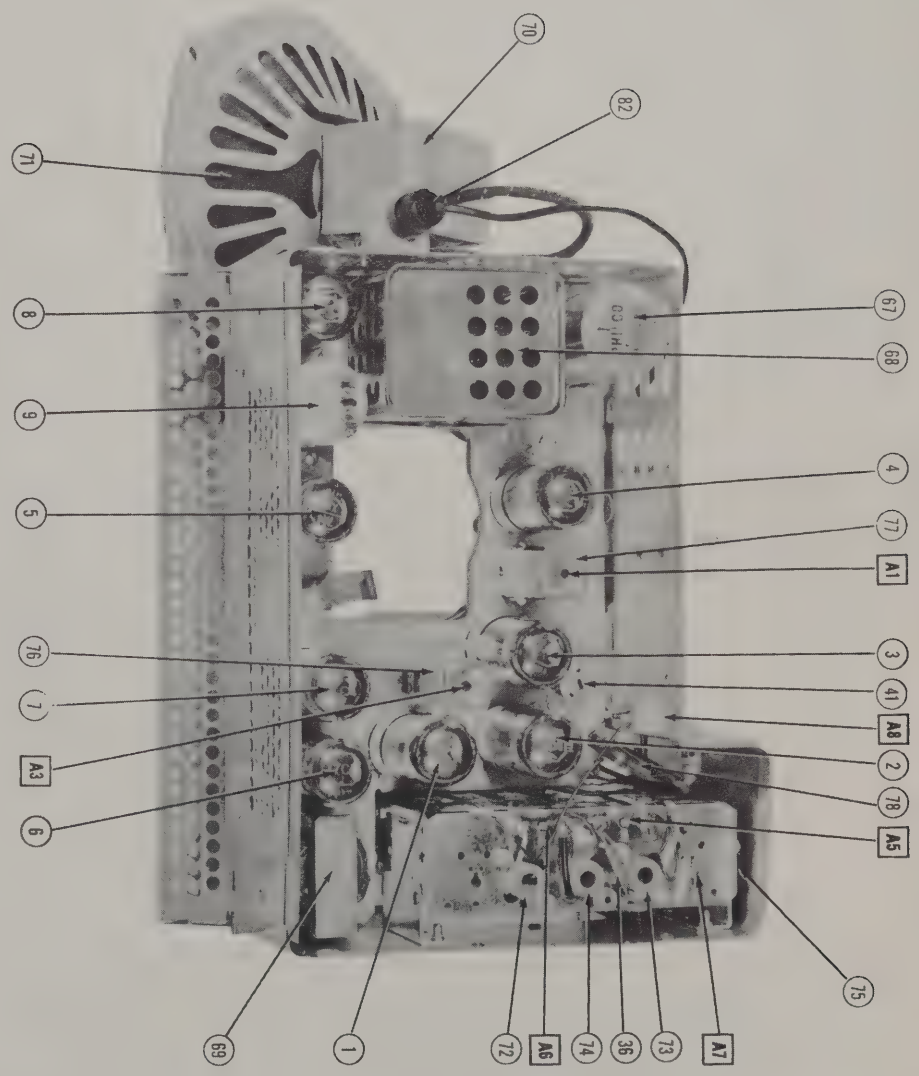
ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PACKARD PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
9A	20	350	61-0150	AF2222J*	UP111145	DY-404	EL-415	Filter ◓
B	10	350						Filter ■
C	5	300			BR435			Decoupling▲
D	10	25		PRS25/10				Cathode Bypass
10	.5	120	61-0134		GT2P5	SHH-1	68P25	Hash Filter
11	.5	120	61-0134		GT2P5	SHH-1	68P25	Hash Filter
12	.003	1500	61-0115	1684-003	GT16D3	STM-16-003	TR-23	Buffer
13	.01	1000		1084-01	GT16S1	STM-10-01	TR-11	Output Plate Bypass
14	.01	600	30-4650-58	684-01	GT6S1	ST-6-01	TC-11	Audio Coupling
15	.01	600	30-4650-58	684-01	GT6S1	ST-6-01	TC-11	" "
16	.0047	600	30-4650-39	684-005	GT6D5	ST-6-005	TC-25	" "
17	.0047	600	30-4650-39	684-005	GT6D5	ST-6-005	TC-25	" "
18	.0082	400	30-4651-1	484-0075	GT6S1	ST-4-01	TC-11	Tone Compensation
19	.068	200	30-4651	484-075	GT2S5	ST-6-06	TC-16	" "
20	.25	120	61-0151	484-.25	GT2P25	ST-2-25	68P24	AF Cathode Bypass
21	.047	200	30-4650-28	484-05	GT2S5	ST-4-05	TC-15	Decoupling
22	.047	200	30-4650-28	484-05	GT2S5	ST-4-05	TC-15	IF Cathode Bypass
23	.047	200	30-4650-28	484-05	GT2S5	ST-4-05	TC-15	Conv. Cathode Bypass
24	.047	200	30-4650-28	484..05	GT2S5	ST-4-05	TC-15	RF Cathode Bypass
25	.047	200	30-4650-28	484-05	GT2S5	ST-4-05	TC-15	AVC Filter
26	.047	200	30-4650-28	484-05	GT2S5	ST-4-05	TC-15	" "
27	100	500	60-10105307	1468-0001	5W5T1	MO.5-31	1FM-31	1st AF Plate Bypass
28	220	300	30-1228-3	1468-00025	5W5T25	MO.5-325	1FM-325	RF Bypass
29	220	300	30-1228-3	1468-00025	5W5T25	MO.5-325	1FM-325	" "
30	220	300	30-1228-3	1468-00025	5W5T25	MO.5-325	1FM-325	" " See NOTE 1
31	220	300	30-1228-3	1468-00025	5W5T25	MO.5-325	1FM-325	" " " "
32	220	300	30-1228-3	1468-00025	5W5T25	MO.5-325	1FM-325	Diode RF Filter NOTE 2
33	220	300	30-1228-3	1468-00025	5W5T25	MO.5-325	1FM-325	" " " " "
34	220	300	30-1228-3	1468-00025	5W5T25	MO.5-325	1FM-325	OSC Feedback
35	100	500	60-10105307	1468-0001	5W5T1	MO.5-31	1FM-31	OSC Grid. Cap.
36	100	500	60-10105307	1468-0001	5W5T1	MO.5-31	1FM-31	Fixed Trimmer
37	220	300	30-1228-3	1468-.00025	5W5T25	MO.5-325	1FM-325	RF Coupling
38	54.5	300	61-0149					Fixed Trimmer
39	215	500	30-1220-3					" "

* Parallel sections to obtain desired capacity.
NOTE 1 Not used in all models.
NOTE 2 In some models items 32 and 33 may be in IF can.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PACKARD PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	INSTALLATION NOTES
40A	350KΩ	½	33-5557-2			Volume Control } Ganged
B	2 Meg.-	½				Tone Control } Ganged
	2 Meg.					
C	Switch					Power Switch
41	200Ω to 700Ω	1	67-0036			Sensitivity Control

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES	
	RESISTANCE	WATTS	PACKARD PART No.	IRC PART No.		
42	820Ω	½	66-1828340	BTS-820	Gray-Red-Br.	RF Cathode
43	10KΩ	½	66-3108340	BTS-10K	Br.-Blk.-Or.	RF Plate Load
44	68KΩ	½	66-3681540	BTS-68K	Blue-Gray-Or.	AVC Network
45	68KΩ	½	66-3681540	BTS-68K	Blue-Gray-Or.	Converter Grid
46	100KΩ	½	66-4101540	BTS-100K	Br.-Blk.-Yl.	OSC. Grid
47	22KΩ	½	66-3228340	BTS-22K	Red-Red-Or.	OSC. Anode
48	680Ω	½	66-1688540	BTS-680	Blue-Gray-Br.	IF Cathode See NOTE
49	27KΩ	1	66-3274350	BTA-27K	Red-Vi.-Or.	Screen Dropping
50	1 Meg.	½	66-5101540	BTS-1 Meg.	Br.-Blk.-Grn.	AVC Network
51	27KΩ	½	66-3271340	BTS-27K	Red-Vi.-Or.	Diode Filter
52	470Ω	½	66-1478340	BTS-470	Yl.-Vi.-Br.	AF Cathode
53	10 Meg.	½	66-6101540	BTS-10 Meg.	Br.-Blk.-Blue	AF Grid.
54	220KΩ	½	66-4228340	BTS-220K	Red-Red-Yl.	AF Plate Load
55	2200Ω	½	66-2.21540	BTS-2200	Red-Red-Red	Tone Compensation
56	10 Meg.	½	66-6101540	BTS-10Meg.	Br.-Blk.-Blue	Phase Inv. Grid.
57	220KΩ	½	66-4228340	BTS-220K	Red-Red-Yl.	Phase Inv. Cathode
58	220KΩ	½	66-4228340	BTS-220K	Red-Red-Yl.	Phase Inv. Plate Load
59	470KΩ	½	66-4471540	BTS-470K	Yl.-Vi.-Yl.	Output Grid.
60	470KΩ	½	66-4471540	BTS-470K	Yl.-Vi.-Yl.	Output Grid.
61	330Ω	1	66-1334350	BW-1-330	Or.-Or.-Br.	Output Cathode
62	1500Ω	½	66-2151340	BTS-1500	Br.-Grn.-Red	Feedback
63	4700Ω	1	66-2474350	BTA-4700	Yl.-Vi.-Red	Decoupling
64	1000Ω	1	66-2104350	BTA-1000	Br. Blk.-Red	Filter
65	100Ω	1	66-1104350	BW-1-100	Br.-Blk.-Br.	Hash Supp.
66	100Ω	1	66-1104350	BW-1-100	Br.-Blk.-Br.	Hash Supp.

NOTE: Some models may use 1500Ω in this application.

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA		INSTALLATION NOTES
				PACKARD PART No.	RADIART PART No.	
67	Int.	6.3 VDC	115∿	83-0026	5326P	

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	PACKARD PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
68	6.3 VDC @ 3.4A	.540VCT @.05ADC			32-8314-1			P-4070

TRANSFORMER (OUTPUT)

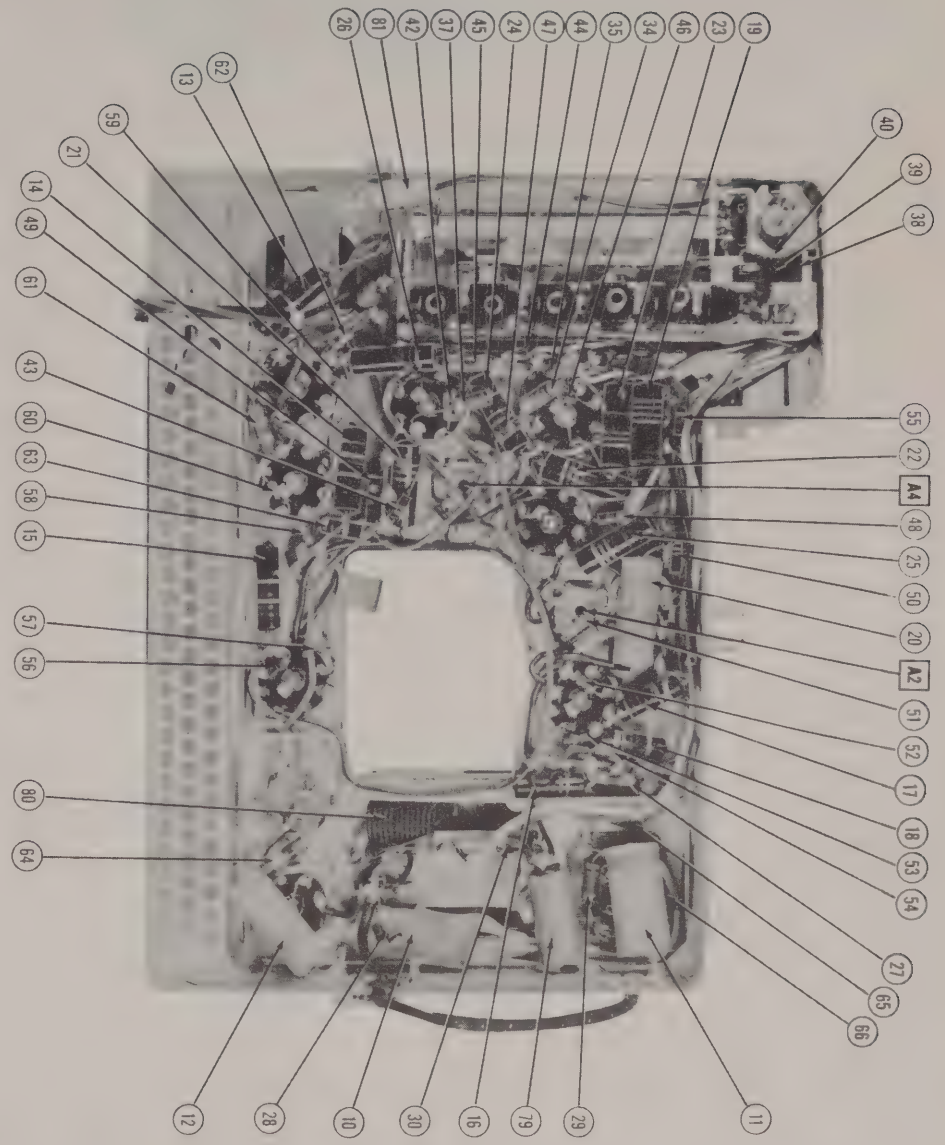
ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		PACKARD PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
69	10KΩ CT	3.9Ω	630Ω CT	.3Ω	32-8325	A-3631			

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			PACKARD PART No.	JENSEN PART No.	QUAM PART No.	
	FIELDRES.	VC IMP.				
70	4.3Ω	3.9Ω	36-1609-4	S"-110† Mod. P6-V	7EV6	† Use adapter baffle if necessary.
	CONE DIA.	VC DIA.				
71	6¼"	1"				

DATE 3/49 #495-15 SET #57 FOLDER #15

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA PACKARD PART No.	REPLACEMENT DATA MEISSNER PART No.	
72	Ant. Coil		12.6Ω	65-0349		Items 72,73,74 & 75 are part of coil assembly No. 77-0588-2.
73	RF Coil		12Ω	65-0359		
74	OSC Coil		3.3Ω	65-0350		
75	OSC Shunt Coil		3.7Ω	65-0351		
76	Input IF	48Ω	53Ω	32-4160-2		
77	Output IF	50Ω	58Ω	32-4161-2		
78	Ant. Choke		6.8Ω	65-0437		
79	Vib. Choke		0Ω	65-0151		
80	RF Choke		0Ω	32-1644		

1. Turn receiver on and allow it to warm up for about 15 minutes.
2. Remove the metal-button cover, and press in any button so that it remains engaged: then tune the radio by rotating the small knurled shaft, which automatically springs out as the cover is pulled off.
3. Check accuracy of setting by detuning with manual tuning control and retuning with pushbutton. If setting is off retune with knurled knob in the button.
4. To set up the remaining buttons follow the same procedure outlined above.

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA PACKARD PART No.	REPLACEMENT DATA	INSTALLATION NOTES
81	Bayonet	6-8V	0.15A	Brown	34-2039		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	PACKARD PART No.	NOTES
82	Fuse	45-2559	14 Amp.
	Dial	27-5962	
	Knob	56-4729FA8	Tuning
	Knob	27-4667-6	Volume
	Knob	56-4699FA3	Tone

DATE 3/49 #495-15 SET #57 FOLDER #15

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7A7	0V	160VDC	95VDC	0V	0V	-.1VDC	4.1VDC	6.3VDC
2	7B8	0V	225VDC	130VDC	§-8VDC	95VDC	-.1VDC	3.8VDC	6.3VDC
3	7A7	0V	225VDC	95VDC	0V	0V	0V	6.2VDC	6.3VDC
4	7B6	0V	95VDC	-.6VDC	.2VDC	-.5VDC	-.5VDC	.2VDC	6.3VDC
5	7A4	0V	120VDC	0V	0V	0V	.2VDC	100VDC	6.3VDC
6	7C5	0V	240VDC	230VDC	6.3VDC	0V	0V	15VDC	6.3VDC
7	7C5	0V	240VDC	230VDC	0V	0V	0V	15VDC	6.3VDC
8	7Y4	6.3VDC	0V	270VAC	0V	0V	270VAC	245VDC	0V

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

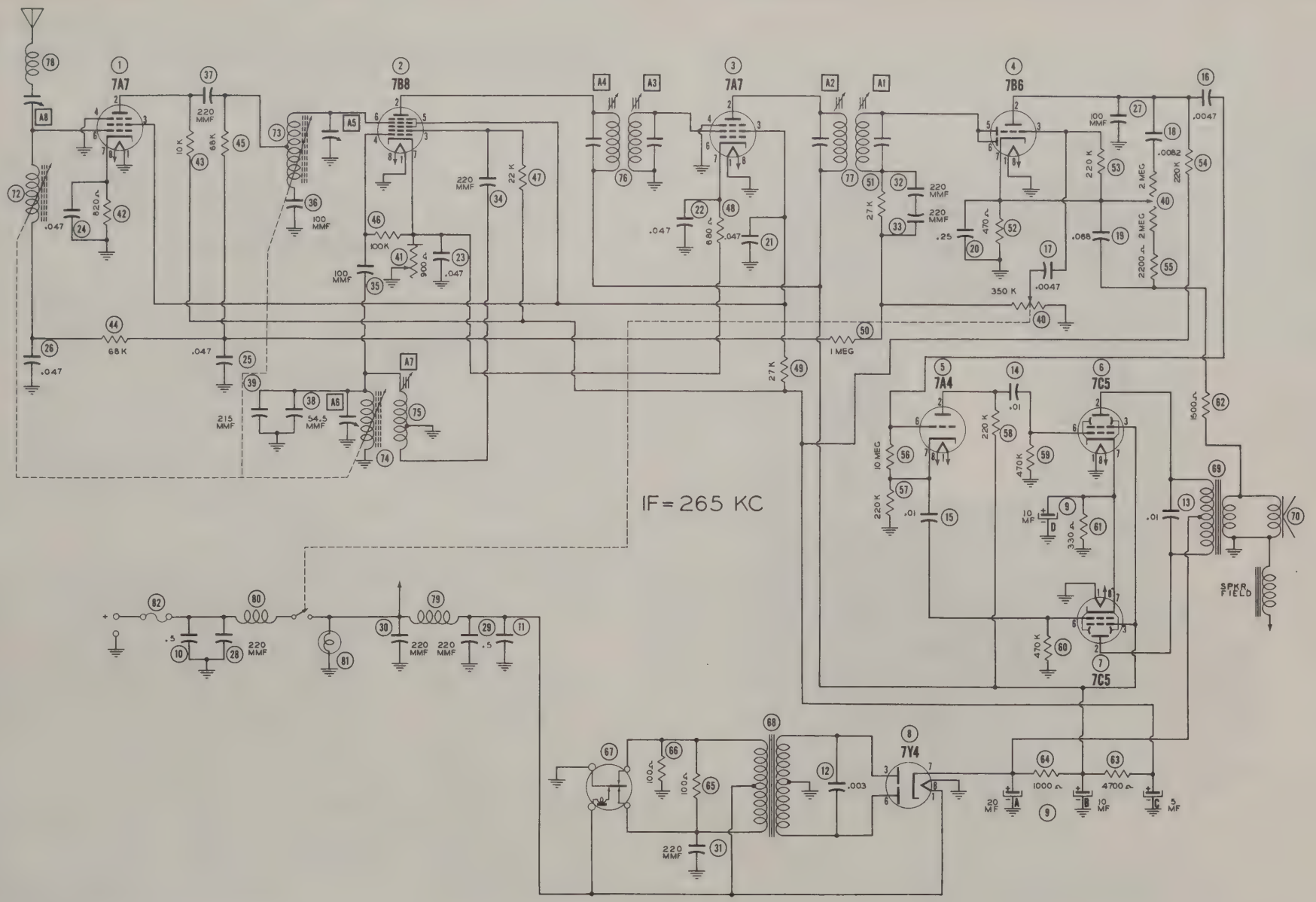
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7A7	0Ω	210KΩ	230 KΩ	0Ω	0Ω	1.5 MEG	820Ω	.1Ω
2	7B8	0Ω	200KΩ	220KΩ	100KΩ	230KΩ	1.4 MEG	190Ω	.1Ω
3	7A7	0Ω	200KΩ	230KΩ	0Ω	0Ω	53Ω	840Ω	.1Ω
4	7B6	0Ω	420KΩ	10MEG	470Ω	350KΩ	350KΩ	470Ω	.1Ω
5	7A4	0Ω	420KΩ	INF	INF	INF	10 MEG	220KΩ	.1Ω
6	7C5	0Ω	200KΩ	200KΩ	.1Ω	0Ω	470kΩ	370Ω	.1Ω
7	7C5	0Ω	200KΩ	200KΩ	0Ω	470KΩ	470KΩ	370Ω	.1Ω
8	7Y4	.1Ω	INF	425Ω	INF	INF	400Ω	200KΩ	0Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

DATE 3/49 #495-15 SET #57 FOLDER #15



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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PHILCO
MODEL 49-906

PHILCO
MODEL 49-906

TRADE NAME	Philco, Model 49-906
MANUFACTURER	Philco Corp., Tioga & "C" Sts. Philadelphia, Pa.
TYPE SET	AC-DC Operated AM-FM Superheterodyne Receiver with Loop Antenna
TUBE(EIGHT)	Types 6BJ6 or 12AU6 FM RF Amp., 14F8 FM Converter, 12AU7 AM Converter, 6BJ6 1st IF Amp., 6BJ6 2nd IF Amp., 19T8 Det-AVC-AF, 50A5 Power Output, 117Z3 Rectifier.
POWER SUPPLY	105-120 Volts AC-DC
RATING	.32 Amp @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1620 KC FREQ. MOD. 88-108MC

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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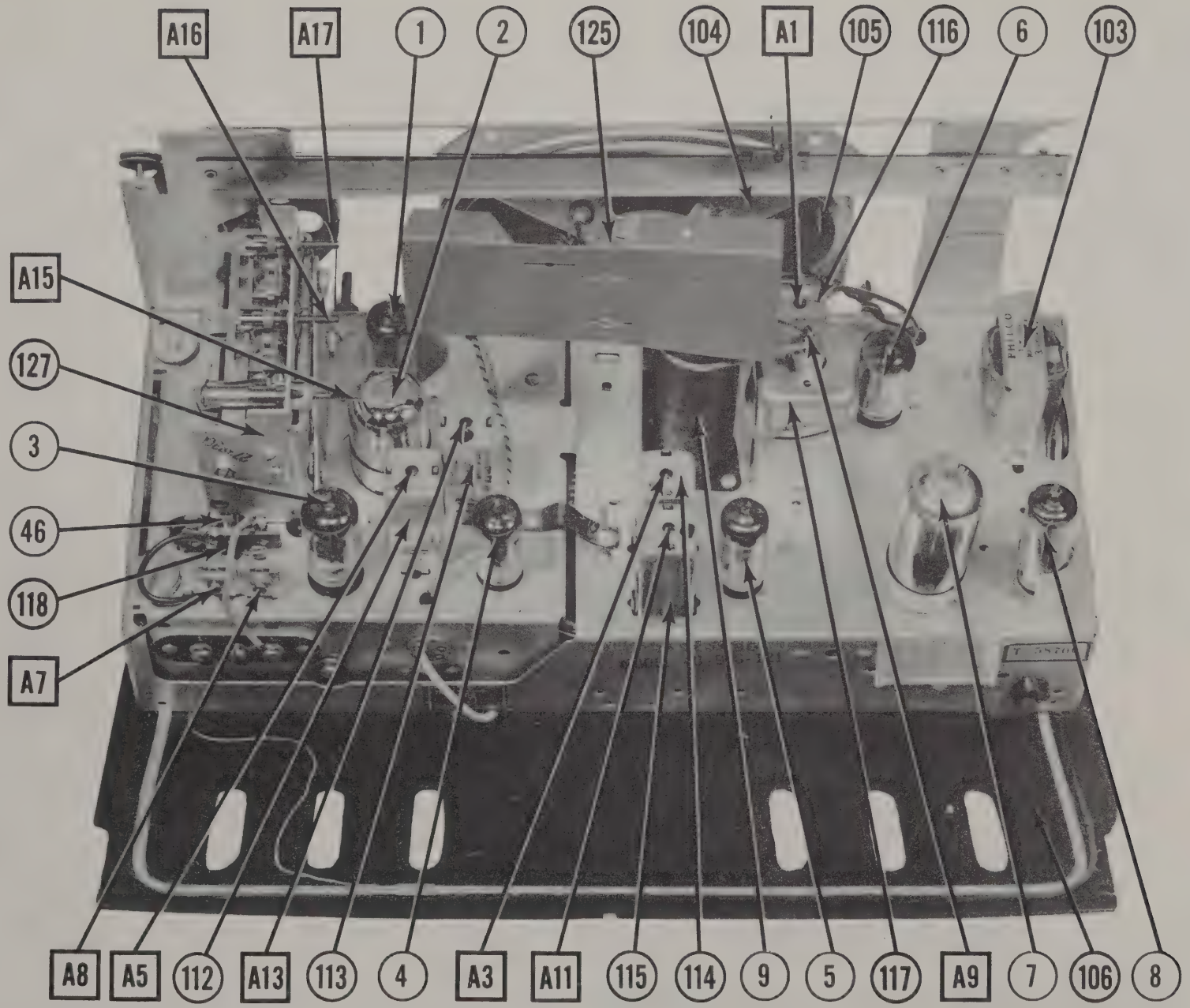
DATE 3/49 495-16 SET #57 FOLDER #16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A17
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2
125
104
A1
105
116
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103
A15
127
3
46
118
A7
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A5
112
A13
113
4
A3
A11
115
114
9
5
117
A9
7
106
8

A
B
A2
A4
A6
A10
A12
A14

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PHILCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1A	FM RF Amp.	6BJ6	6BJ6	7CM	
B	" " "	12AU6	12AU6	7BK	
2	FM Converter	14F8	14F8	8BW	
3	AM Converter	12AU7	12AU7	9A	
4	1st IF Amp.	6BJ6	6BJ6	7CM	
5	2nd IF Amp.	6BJ6	6BJ6	7CM	
6	Det.-AVC-AF	19T8	19T8		
7	Power Output	50A5	50A5	6AA	
8	Rectifier	117Z3	117Z3	4BR	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: PHILCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR‡ PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
9A	40	150	30-2568-10	AF888D‡	UP8415	DY-8040-150	D14842	Filter
B	70	150		PRS150/30	BR4015	M-40-150		▲ Filter
C	40	150						■ "
10	25	25	45-3001	PRS25/25	BR252A	M-25-25	TA-25	Cathode Bypass
11	2	50	30-2417-7	PRS150/4	BR245	M-4-450	D7994	Stabilizing Cap.
12	.04	400	45-3500-2	484-05	GT6S4	ST-6-04	TC-14	Line Filter
13	.05	400	39-9851-6	484-05	GT4S5	ST-4-05	TC-15	RF Bypass-See Note
14	.03	400	30-3500-1	484-03	GT4S3	ST-6-03	72P1	Line Isolation
15	.01	400	61-0120	484-01	GT4S1	ST-4-01	TC-11	RF Bypass
16	.01	600	61-0120	684-01	GT6S1	ST-6-01	TC-11	" "
17	.05	400	61-0122	484-05	GT4S5	ST-4-05	TC-15	" "
18	.03	400	45-3500-1	484-03	GT4S3	ST-4-03	TC-13	" "
19	.02	400	61-0108	484-02	GT4S2	ST-4-02	TC-12	Output Plate Bypass
20	.006	400	45-3500-7	484-006	GT6D6	ST-6-006	TC-26	Audio Coupling
21	.006	400	45-3500-7	484-006	GT6D6	ST-6-006	TC-26	" "
22	.02	400	61-0108	484-02	GT4S2	ST-4-02	TC-12	" "
23	.01	600	61-0120	684-01	GT6S1	ST-6-01	TC-11	Tone Compensation
24	.01	400	61-0120	484-01	GT4S1	ST-4-01	TC-11	Diode Load Capacitor
25	.01	600	61-0120	684-01	GT6S1	ST-6-01	TC-11	2nd IF Plate Decoup.
26	.01	600	61-0120	684-01	GT6S1	ST-6-01	TC-11	2nd IF Screen Byp.
27	.01	400	61-0120	484-01	GT4S1	ST-4-01	TC-11	2nd IF Cath. Bypass
28	.006	400	45-3500-7	484-006	GT6D6	ST-6-006	TC-26	1st IF Decoupling
29	.01	600	61-0120	684-01	GT6S1	ST-6-01	TC-11	AVC Filter
30	.01	600	61-0120	684-01	GT6S1	ST-6-01	TC-11	" "
31	.01	600	61-0120	684-01	GT6S1	ST-6-01	TC-11	AM Conv. Decoupling
32	.01	400	61-0120	484-01	GT4S1	ST-4-01	TC-11	FM Conv. Decoupling
33	.01	600	61-0120	684-01	GT6S1	ST-6-01	TC-11	Tuning Cap. Isol.
34	.01	400	61-0120	484-01	GT4S1	ST-4-01	TC-11	Filament Bypass
35	.01	600	61-0120	684-01	GT6S1	ST-6-01	TC-11	Rectifier Bypass
36	100	300	62-110009001	1468-0001	5W5T1	MO.5-31	1FM-31	Output Grid Bypass
37	100	300	62-110009001	1468-0001	5W5T1	MO.5-31	1FM-31	AF Plate Bypass-Cer.
38	100	300	62-110009001	1468-0001	5W5T1	MO.5-31	1FM-31	RF Bypass "
39	1500	300	62-215001011	1467-0015	1W5D15	MW.5-215	1FM-215	De-emphasis "
40	100	300	62-110009001	1468-0001	5W5T1	MO.5-31	1FM-31	RF Bypass "
41	100	300	62-110009001	1468-0001	5W5T1	MO.5-31	1FM-31	" " "
42	100	300	62-110009001	1468-0001	5W5T1	MO.5-31	1FM-31	Osc. Feedback "
43	220	300	62-122001001	1468-0002	5W5T2	MO.5-32	1FM-32	AM Osc. Grid Cap. "
44	1500	300	62-215001011	1467-0015	1W5D15	MW.5-215	1FM-215	AM Conv. Cath.Byp. "
45	100	300	62-110009001	1468-0001	5W5T1	MO.5-31	1FM-31	RF Coupling "
46	10	300	62-010009001	1468-00001	5W5Q1	MO.5-41	MS-41	Ext. Ant. Coup. "
47	1500	300	62-215001011	1467-0015	1W5D15	MW.5-215	1FM-215	Decoupling "
48	1500	300	62-215001011	1467-0015	1W5D15	MW.5-215	1FM-215	Osc. Plate Decoup. "
49	220	300	62-122001001	1468-0002	5W5T2	MO.5-32	1FM-32	Osc. Feedback "
50	220	300	62-122001001	1468-0002	5W5T2	MO.5-32	1FM-32	Osc. Coupling "
51	51	300	62-051009001	1468-00005	5W5Q5	MO.5-45	1FM-45	FM Osc. Grid Cap. "
52	100	300	62-110009001	1468-0001	5W5T1	MO.5-31	1FM-31	FM Conv. Cath.Byp. "
53	100	300	62-110009001	1468-0001	5W5T1	MO.5-31	1FM-31	RF Coupling "
54	100	300	62-110009001	1468-0001	5W5T1	MO.5-31	1FM-31	" " "
55	100	300	62-110009001	1468-0001	5W5T1	MO.5-31	1FM-31	RF Screen Bypass "
56	100	300	62-110009001	1468-0001	5W5T1	MO.5-31	1FM-31	RF Bypass "
57	33	300	62-033009001	1468-00004	5W5Q4	MO.5-44	1FM-44	RF Cath. Byp. "
58	51	300	62-051009001	1468-00005	5W5Q5	MO.5-45	1FM-45	RF Coupling "
59	100	300	62-110009001	1468-0001	5W5T1	MO.5-31	1FM-31	Ant. Coupling "
60	100	300	62-110009001	1468-0001	5W5T1	MO.5-31	1FM-31	" " "

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS: FIELD	RATINGS: VC IMP.	REPLACEMENT DATA: PHILCO PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	INSTALLATION NOTES
	FIELD	VC IMP.				†Drill and tap magnet frame.
104	PM	3.7Ω	36-1615-2		46A15†	
	CONE DIA.	VC DIA.				
105	4"x6"	9/16"				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: PHILCO PART No.	REPLACEMENT DATA: MEISSNER PART No.	
106	AM Loop Ant.		1Ω	32-4052-22		
107	FM Loop Load. Coil		1Ω	32-4217-1		
108	FM Ant.Coil		0Ω	32-4158-1		
109	FM RF Coil		0Ω	32-4159-1		
110	AM Osc. Coil		11Ω	32-4221-1	14-1060	
111	FM " "		0Ω	32-4018-5		
112	AM 1st IF	7.5Ω	18Ω*	32-4258		*Tertiary Winding 18Ω
113	FM 1st IF	1Ω	1Ω	32-4257		
114	AM 2nd IF	8Ω	8Ω	32-4160-3		
115	FM 2nd IF	1Ω	1Ω	32-4257-1		
116	AM 3rd IF	14.5Ω	14.5Ω	32-4240-2		
117	FM Det. Trans.	1.5Ω	0Ω	32-4261-1		
118	RF Choke		.5Ω	32-4061-2		
119	FM Plate Choke		.5Ω	32-4061-2		
120	RF Choke		.5Ω	32-4061-2		
121	" "		.5Ω	32-4061-2		
122	" "		.5Ω	32-4061-2		
123	Fil. Choke		1.5Ω	32-4143-4		
124	Isol. Choke		.5Ω	32-4061-2		

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: PHILCO PART No.	REPLACEMENT DATA	INSTALLATION NOTES
125	Screw	110			34-2605		

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
126	Switch	43-1834-1	Band
127	2 Gang Var. Cap.	31-2724-2	(19-521MMF, 11-247MMF
A7, A8	Trimmer Strip	31-6476-13	BC Osc. Adj. / BC Ant. Adj.
	Cabinet	10715	
	Dial Scale	54-5013	
	Dial Pointer	56-5630-1FCP	
	Knob	54-4557-1	

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA PHILCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
61	100	300	62-110009001	1468-0001	5W5T1	M0.5-31	1FM-31	Filament Bypass Cer.
62	100	300	62-110009001	1468-0001	5W5T1	M0.5-31	1FM-31	" " "
63	100	300	62-110009001	1468-0001	5W5T1	M0.5-31	1FM-31	" " "
64	100	300	62-110009001	1468-0001	5W5T1	M0.5-31	1FM-31	" " "
65	100	300	62-110009001	1468-0001	5W5T1	M0.5-31	1FM-31	" " "
66	100	300	62-110009001	1468-0001	5W5T1	M0.5-31	1FM-31	RF Bypass "

‡Parallel sections to obtain desired capacity.
Note-when replacing Item 13, wind 11 turns hook up wire around capacitor and connect in series with capacitor to chassis.

CONTROLS

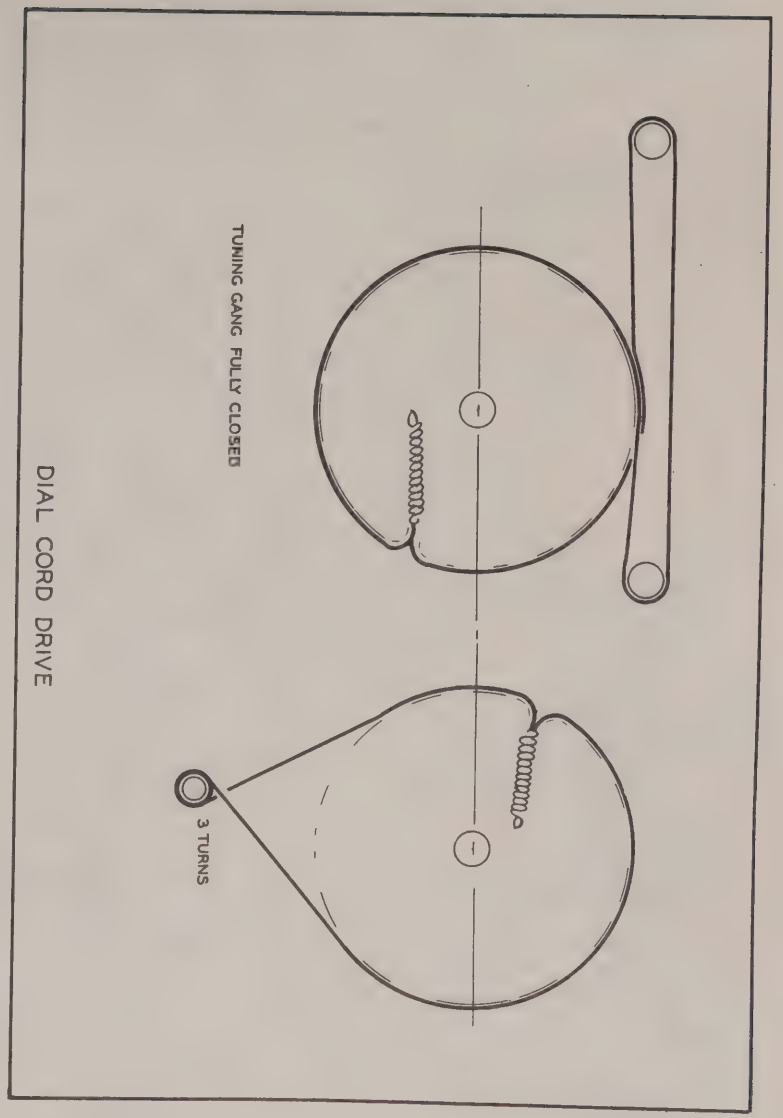
ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA PHILCO PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
67	2 Meg.	½	45-5019		M-58-S	Volume Control
68	500KΩ	½	45-5009			Tone Control and Switch

RESISTORS

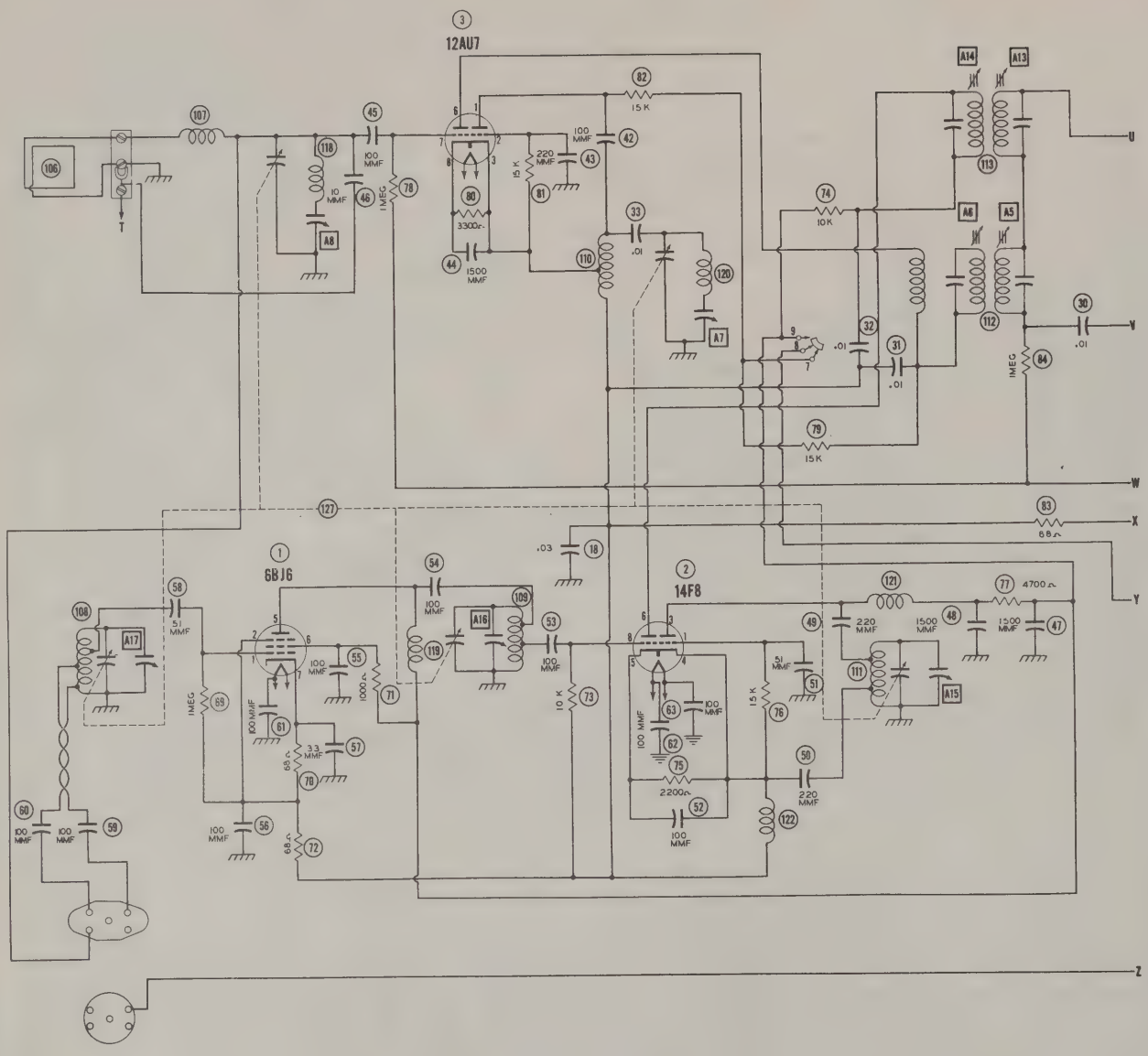
ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA PHILCO PART No.	IRC PART No.	IDENTIFICATION CODES
69	1 Meg.	½	66-5103340	BTS-1 Meg.	Br.-Blk.-Grn. FM RF Grid
70	68Ω	½	66-0683340		Blue-Gray-Blk. FM RF Cathode
71	1000Ω	½	66-2103340	BTS-1000	Br.-Blk.-Red FM RF Screen
72	68Ω	½	66-0683340		Blue-Gray-Blk. Parasitic Suppressor
73	10KΩ	½	66-3103340	BTS-10K	Br.-Blk.-Or. FM Conv. Grid
74	10KΩ	½	66-3103340	BTS-10K	Br.-Blk.-Or. Decoupling
75	2200Ω	½	66-2223340	BTS-2200	Red-Red-Red FM Conv. Cathode
76	15KΩ	½	66-3153340	BTS-15K	Br.-Grn.-Or. FM Osc. Grid
77	4700Ω	½	66-2473340	BTS-4700	Yl.-Vi.-Red FM Osc. Plate
78	1 Meg.	½	66-5103340	BTS-1 Meg.	Br.-Blk.-Grn. AM Converter Grid
79	15KΩ	½	66-3153340	BTS-15K	Br.-Grn.-Or. AM Conv. Plate Decoup.
80	3300Ω	½	66-2333340	BTS-3300	Or.-Or.-Red AM Conv. Cathode
81	15KΩ	½	66-3153340	BTS-15K	Br.-Grn.-Or. AM Osc. Grid
82	15KΩ	½	66-3153340	BTS-15K	Br.-Grn.-Or. AM Osc. Plate
83	68Ω	½	66-0683340		Blue-Gray-Blk. Parasitic Suppressor
84	1 Meg.	½	66-5103340	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
85	47Ω	½	66-0473340		Yl.-Vi.-Blk. 1st IF Cathode
86	1000Ω	½	66-2103340	BTS-1000	Br.-Blk.-Red 1st IF Decoupling
87	68Ω	½	66-0683340		Blue-Gray-Blk. Parasitic Suppressor
88	120Ω	½	66-1123340		Br.-Red-Br. 2nd IF Cathode
89	1000Ω	½	66-2103340	BTS-1000	Br.-Blk.-Red 2nd IF Screen
90	1000Ω	½	66-2103340	BTS-1000	Br.-Blk.-Red 2nd IF Plate Decoupling
91	3.3 Meg.	½	66-5333340	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
92	47KΩ	½	66-3473340	BTS-47K	Yl.-Vi.-Or. Diode Filter
93	330KΩ	½	66-4333340	BTS-330K	Or.-Or.-Yl. Diode Load
94	47kΩ	½	66-3473340	BTS-47K	Yl.-Vi.-Or. De-emphasis
95	47KΩ	½	66-3473340	BTS-47K	Yl.-Vi.-Or. Ratio Det. Diode Load
96	100KΩ	½	66-4103340	BTS-100K	Br.-Blk.-Yl. Tone Compensation
97	10 Meg.	½	66-6103340	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
98	470KΩ	½	66-4473340	BTS-470K	Yl.-Vi.-Yl. AF Plate Load
99	470KΩ	½	66-4473340	BTS-470K	Yl.-Vi.-Yl. Output Grid
100	220Ω	½	66-1223340	BW-½-220	Red-Red-Br. Output Cathode
101	470Ω	1	66-1474340	BTA-470	Yl.-Vi.-Br. Filter
102	220Ω	2	66-1225340	BW-2-220	Red-Red-Br. "

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA PHILCO PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
103	2000Ω	3.7Ω	230Ω	.7Ω	32-8296-4	A-3876	T22845	A-2928	



DATE 3/49 495-16 SET #57 FOLDER #16



VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	PIN 9
#1	6BJ6	.4VDC	3.1VAC	4.2VAC	50VAC	100VAC	100VDC	3.1VDC		
#2	14F8	4-.2VDC	32VAC	77VDC	2.5VDC	4.2VDC	83VDC	19VAC	2.3VDC	
3	12AU7	60VDC	4-2.4VDC	1.2VDC	32VAC	46VAC	90VDC	-.8VDC	5.4VDC	37VAC
4	6BJ6	0V	1.4VDC	50VAC	58VAC	105VDC	105VDC	.9VDC		
5	6BJ6	0V	1.2VDC	58VAC	65VAC	108VDC	105VDC	0V		
6	19T8	-.5VDC	-1.0VDC	-.5VDC	0V	19VAC	-.7VDC	0V	-.9VDC	45VDC
7	50A5	117VAC	105VDC	108VDC	0V	0V	0V	9.2VDC	65VAC	
8	117Z3	117VAC	0V	0V	117VAC	117VAC	128VDC	0V		

‡TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	PIN 9
#1	6BJ6	1 Meg.	200Ω	38Ω	42Ω	41KΩ	42KΩ	270Ω		
#2	14F8	15KΩ	27Ω	46KΩ	130Ω	2.3KΩ	51KΩ	17Ω	10KΩ	
3	12AU7	56KΩ	15KΩ	130Ω	27Ω	38Ω	71KΩ	4.6 Meg.	3.5KΩ	32Ω
4	6BJ6	4 Meg.	115Ω	42Ω	48Ω	42KΩ	42KΩ	68Ω		
5	6BJ6	9Ω	120Ω	48Ω	52Ω	41KΩ	42KΩ	0Ω		
6	19T8	Inf.	47KΩ	Inf.	0Ω	17Ω	360KΩ	0Ω	10 Meg.	510KΩ
7	50A5	75Ω	40KΩ	41KΩ	0Ω	0Ω	470KΩ	220Ω	52Ω	
8	117Z3	75Ω	Inf.	0Ω	75Ω	75Ω	40KΩ	Inf.		

‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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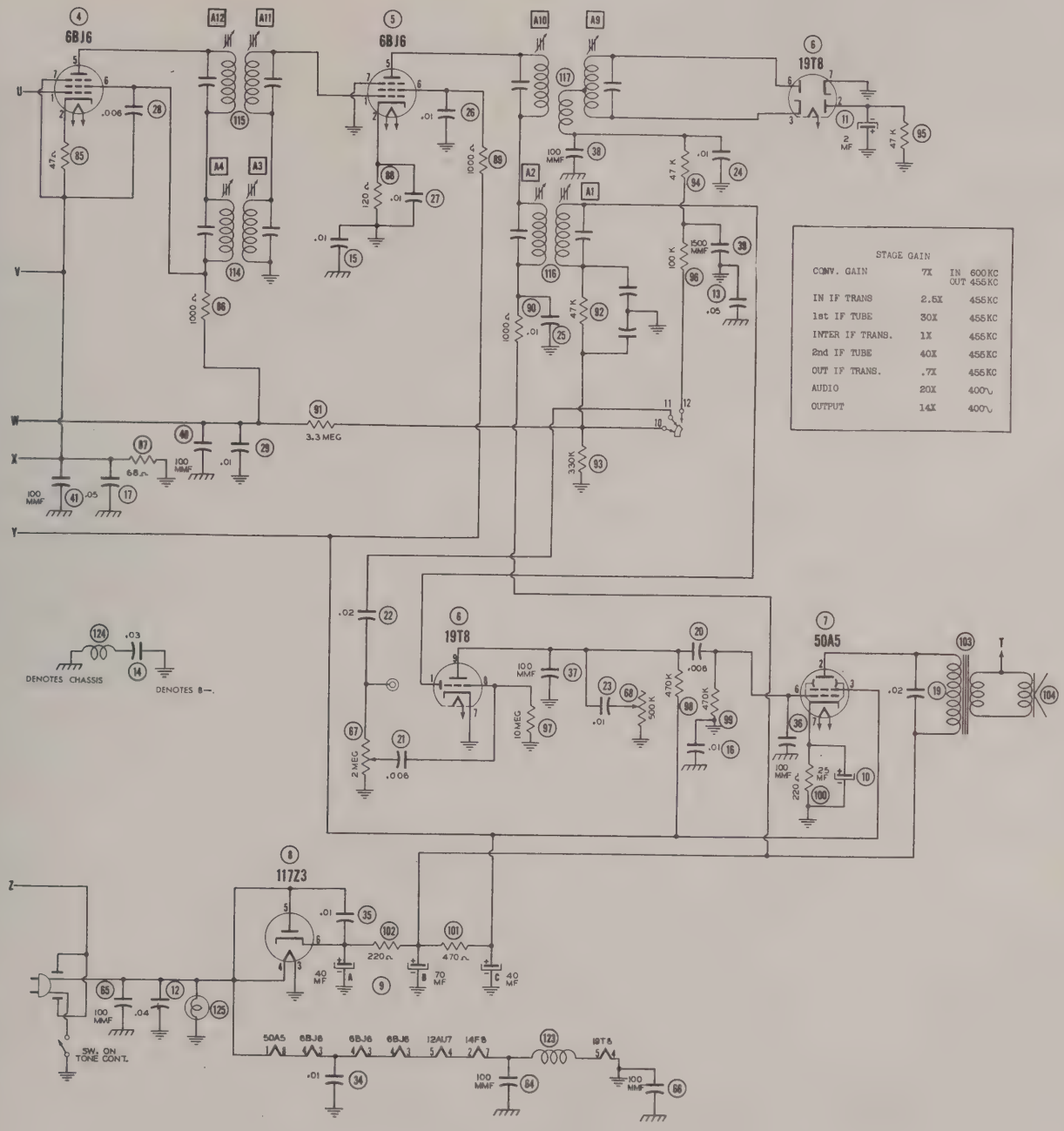

IF = 455 KC AM

IF = 9.1 MC FM

PHILCO
MODEL 49-906
PAGE 7

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

AM Alignment should be completed before FM Alignment is attempted.
To set dial pointer turn tuning cap. fully closed and set pointer 3-15/16" from extreme left edge of dial backplate bracket. This is the calibration mark referred to in steps below.

Use insulated alignment screwdriver for adjusting.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to terminal #1 of ant. terminal strip. Low side to B-.	455KC	BC (Counter clock-wise)	Tuning cap. fully closed	Across voice coil	A1,A2, A3,A4, A5,A6	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD to reduce hum modulation. Do not repeat adjustments.
2		Loop	1600KC	"	4-3/16" from calibration mark.	"	A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust A7 for maximum output.
3		"	1500KC	"	Tune for maximum output.	"	A8	Adjust for maximum output

FM IF ALIGNMENT USING AM SIGNAL GENERATOR VTVM

If VTVM is not available, a 20,000Ω/volt DC voltmeter may be used.
Attenuate output of signal generator to maintain VTVM reading of approximately 10 volts.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4	.1 MFD.	High side to Pin 1 (grid) of 6BJ6 1st IF Tube (4). Low side to B-.	9.1MC (400 ∿ Amp. Mod.)	FM (Clock-wise)	Tuning cap. fully closed	DC probe to Point Ⓐ. Common to B-.	A9,A10, A11,A12	Adjust for maximum deflection. Once adjustments are satisfactory do not change any of them with exception of A9 in Step 6.
5	.1 MFD.	High side to Pin 8 (grid) of 14F8. Low side to B-.	"	"	"	"	A13, A14	Adjust for maximum deflection. Once adjustments are satisfactory do not change either of them.
6	.1 MFD.	High side to Pin 8 (grid) of 14F8 Low side to B-.	9.1MC (400 ∿ Amp. Mod.	FM (Clock-wise)	Tuning cap. fully closed	Across voice coil	A9	Adjust carefully for minimum output. Continue with FM-RF Alignment in Step 7.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4	.01 MFD	High side to Pin 1 (grid) of 6BJ6 1st IF Tube (4). Low side to B-.	9.1MC (Freq.Mod.)	FM (Clock-wise)	Tuning cap. fully closed	Vertical input to Point Ⓐ. Ground to B-.	A10,A11 A12	Disconnect 2 MFD cap. (11) from Point A. Adjust A10, A11 & A12 for maximum amplitude, symmetry and coincidence of pattern per Fig. 1.
5	.01 MFD	High side to Pin 8 (grid) of 14F8. Low side to B-.	"	"	"	"	A13,A14	Adjust for maximum amplitude, symmetry and coincidence of pattern per Fig. 1. Reconnect 2 MFD cap. (11) to Point Ⓐ.
6	.01 MFD	"	"	"	"	Vertical input to Point Ⓑ. Ground to B-.	A9	Adjust for crossover of diagonal lines occurring at scope horizontal sweep line per Fig. 2. Continue with FM-RF Alignment in Step 7.

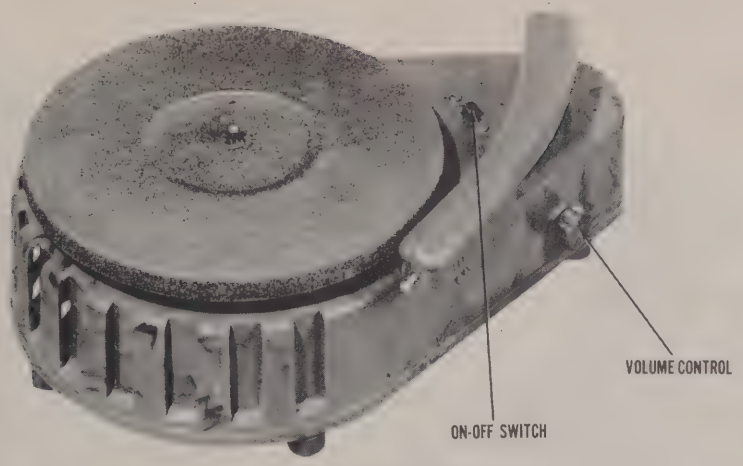
FM RF ALIGNMENT

Check adjustment of FM, Osc., RF & Ant. Coils by using tuning wand. If deflection increases when powdered iron end of wand is inserted in coil, compress the coil slightly. If deflection increases when brass end of wand is inserted in coil, spread the coil slightly. Correct adjustment of coil is indicated when insertion of either end of wand causes a decrease in deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7	Direct	High side to terminal #1 of FM Ant. socket. Low side to B-.	105MC (Unmodulated)	FM	3-7/16" from calibration mark.	DC probe to Point Ⓐ. Common to B-.	A15	Adjust for maximum deflection.
8	"	"	"	"	Tune for maximum deflection.	"	A16,A17	Rock tuning cap. and adjust for maximum deflection.
9	"	"	92MC (Unmodulated)	"	"	"	FM Osc. RF & Ant. Coils (111, 109 & 108)	Check adjustment of coils per prealignment instructions. If coils are adjusted, repeat Steps 7, 8 & 9 until no further improvement can be made.

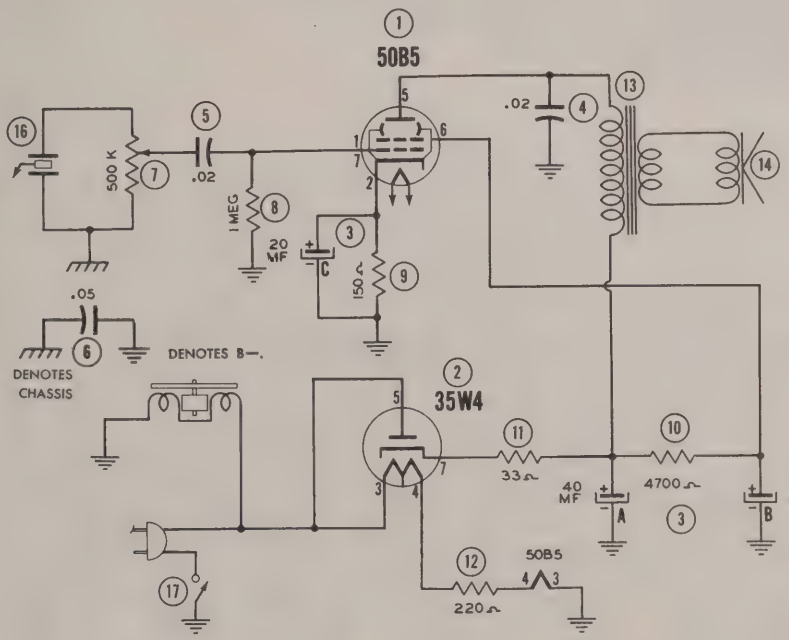
FIG. 1

FIG. 2



SILVERTONE, MODEL 8155

TRADE NAME	Silvertone, Model 8155 (Ch. 463.155)
SUPPLIER	Sears Roebuck & Co., 925 S. Homan St., Chicago, Ill.
TYPE SET	AC Operated Phono Player with 2 Tube Amplifier.
TUBES (TWO)	Types 50B5 Power Output, 35W4 Rectifier
POWER SUPPLY	105-125 Volts AC — RATING .24 Amp. @ 117 Volts AC



Pin No.	50B5 Volt.	Res.
1	.4VDC	1 Meg.
2	7.5VDC	140Ω
3	0V	0Ω
4	5.5VAC	50Ω
5	120VDC	*220Ω
6	110VDC	*6.5KΩ
7	.4DC	1 Meg.

Pin No.	35W4 Volt.	Res.
1	125VDC	135KΩ
2	0V	1Ω
3	53VAC	20Ω
4	117VAC	30Ω
5	117VAC	300Ω
6	110VAC	290Ω
7	130VDC	140KΩ

*-Measured from Pin 7 35W4

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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495-17

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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DATE 3/49 #495-17 SET #57 FOLDER #17

SILVERTONE MODEL
8155 (Ch. 463.155)

SILVERTONE MODEL
8155 (Ch. 463.155)

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Power Output	50B5	50B5	7BZ	
2	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
3A	40	150	B031	AF86D4A	UP43215	DY-403020-150	EL-343	■ Filter
B	30	150						▲ Filter
C	20	25						Cathode Bypass
4	.02	400		484-02	GT4S2	ST-4-02	TC-12	Output Plate Bypass
5	.02	400		484- 02	GT4S2	ST-4-02	TC-12	Audio Coupling
6	.05	400		484-05	GT4S5	ST-4-05	TC-15	Line Isolation

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
7A	500KΩ	½	B-201	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	A	Not Req.	Attach to 7A Per Instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	IRC PART No.	IDENTIFICATION CODES	
8	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn.	AF Grid
9	150Ω	½		BW-½-150	Br.-Grn.-Br.	AF Cathode
10	4700Ω	½		BTS-4700	Yl.-Vi.-Red	Filter
11	33Ω	½			Or.-Or.-Blk.	Surge Limiter
12	220Ω	8	B381	ABA-250#		Line Dropping

Set slider @ 220Ω from one end.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SILVERTONE PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
13	3700Ω	3.7Ω	180Ω	.48Ω	B101		T22S60*	A-3025*	*- Bend Mtg. tabs down. File out slots & mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: SILVERTONE PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V C Imp.				
14	PM	3.7Ω	B081			
	CONE DIA	V C DIA				
15	2 3/8"	9/16"				

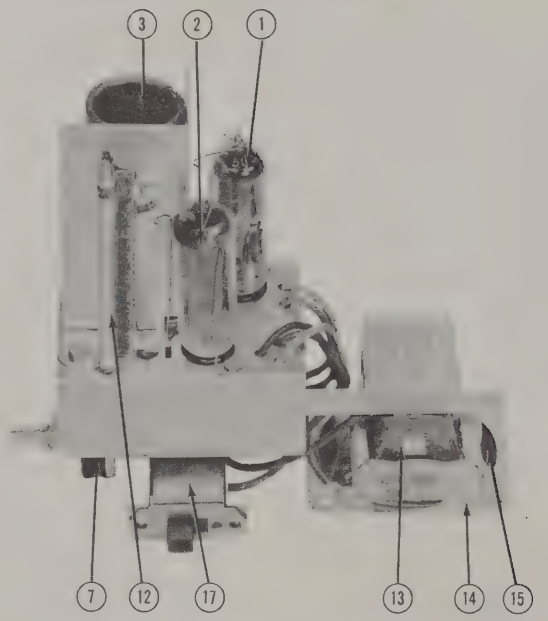
PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA: SILVERTONE PART No.	ASTATIC PART No.	REMARKS
16	B403	L-72-A	

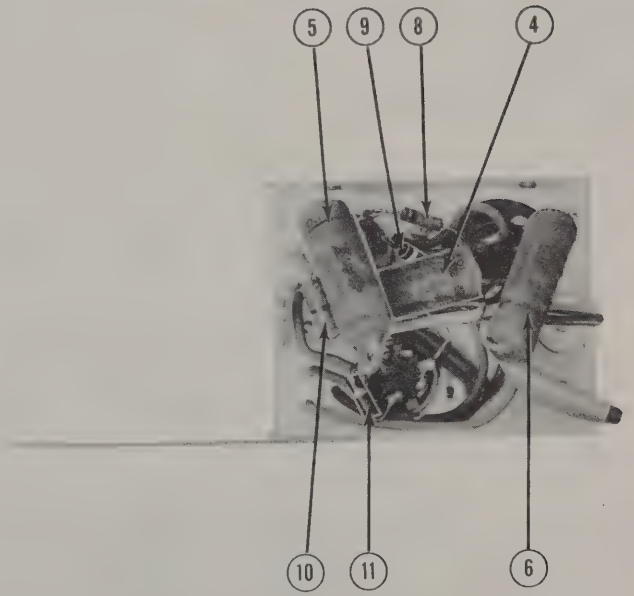
MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
17	Switch Knob	B191 B361	On-Off

CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



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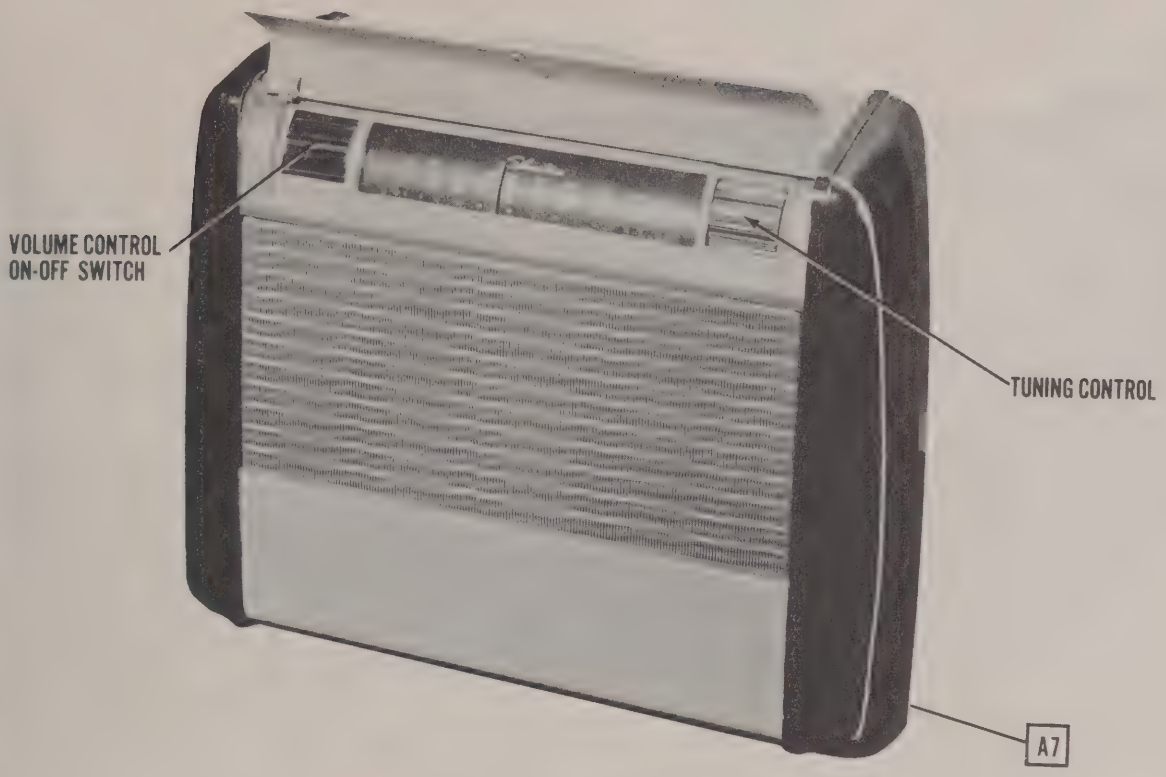
SILVERTONE MODELS 8270, A (Ch. 101.822,A) BATTERY-LINE OPERATED

SILVERTONE MODELS 8270, A (Ch. 101.822,A) BATTERY-LINE OPERATED



SILVERTONE MODELS 8270, A (Ch. 101.822,A) BATTERY-LINE OPERATED

SILVERTONE, MODEL 8270A

TRADE NAME	SILVERTONE, MODELS 8270 (Ch. 101.822) , 8270A (Ch. 101.822A)
SUPPLIER	Sears Roebuck & Co., 925 S.. Homan St. Chicago, Ill.
TYPE SET	Three Power Operated Portable Superheterodyne Receiver with Loop Antenna.
TUBES (SIX)	Types 1LG5 RF AMP., 1LC6 Converter, 1LG5 IF Amp., 1U5 Det.-AVC-AF, 3LF4 power output, 117Z3 Rectifier.
POWER SUPPLY RATING	110-120 Volts AC-DC or 9 Volts "A" Supply and 90 Volts "B" Supply, in Pack Form .17 Amp. @ 117 Volts AC or 71 MA @ 9 Volts DC and 17.8 MA @ 90 Volts DC
TUNING RANGE—BROADCAST	530-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low frequency end of dial.
Use battery power when available. If AC power is used, use an isolation transformer when available. If not, connect a .1 MFD capacitor in series with low side of the signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 6 (GRID) of 1LC6. Low side to B-.	455KC	Tuning Cap fully closed	Across Voice Coil	A1, A2 A3,A4	Adjust for maximum output. If AC power is used without an isolation transformer reduce dummy antenna to 200 MMF to reduce hum modulation. After adjustments are satisfactory install receiver in cabinet.
2.	200MMFD	High side to external Ant. clip Low side to B-.	1400KC	1400KC	Across Voice Coil	A5	Adjust for maximum output.
3.	200MMFD	High side to external Ant. clip. Low side to B-.	1400KC	Tune for maximum output	Across Voice Coil	A6,A7	Adjust for maximum output.

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DATE 3/49 #495-18 SET#57-FOLDER #18

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	1LG5	1LG5		
2	Converter	1LC6	1LC6	7AK	
3	IF Amp	1LG5	1LG5		
4	Det-AVC-AF	1U5	1U5	6BW	
5	Power Output	3LF4	3LF4	6BB	
6	Rectifier	117Z3	117Z3	4BR	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	R64703	AF886D4A*	UP443150*	DY-401*	D5857	Filter
B	30	150						Filter
C	100	25		PRS25/100	BRH251	M-100-25	UHC-102	Filament Bypass
D	40	25						Filament Bypass
8	.05	400		484-05	GT4S5	ST-4-05	TC-15	Line Filter
9	.1	200		484- 1	GT2P1	St-2-1	72P2	Line Isolation
10	.001	600		684-001	GT6D1	ST-6-001	TC-21	Output Plate Bypass
11	.005	400		484-05	GT6D5	ST-6-005	TC-25	Audio Coupling
12	.005	400		484-05	GT6D5	ST-6-005	TC-25	Audio Coupling
13	.007	400		484-0075	GT6D6	ST-6-006	TC-26	Tone Comp
14	.1	200		484- 1	GT2P1	ST-2-1	TC-1	AF Plate Decoupling
15	.05	200		484-05	GT2S5	ST-4-05	TC-15	AF Screen Bypass
16	.01	400		484-01	GT4S1	ST-4-01	TC-11	Audio Coupling
17	.05	200		484-05	GT2S5	ST-4-05	TC-15	RF Bypass Power Supply
18	.1	200		484- 1	GT2P1	ST-2-1	TC-1	Screen Decoupling
19	.01	400		484-01	GT4S1	ST-4-01	TC-11	OSC. Decoupling
20	.05	200		484-05	GT2P5	ST-4-05	TC-15	Conv. Screen Bypass
21	.01	400		484-01	GT4S1	ST-4-01	TC-11	Cabinet Isolation
22	.05	200		484-05	GT2S5	ST-4-05	TC-15	Filament Bypass
23	.1	200		484- 1	GT2P1	ST-2-1	TC-1	Filament Bypass
24	.05	200		484-05	GT2S5	ST-4-05	TC-15	AVC Filter
25	.1	200		484- 1	GT2P1	ST-2-1	TC-1	AVC Filter
26	.001	600		684- 001	GT6D1	ST-6-001	TC-21	EXT ANT Coupling
27	.05	200		484- 05	GT2S5	ST-4-05	TC-15	Fil.Bypass
28	50	500		1468- 00005	5W5Q5	MO.5-45	1FM-45	AF Plate Bypass
29	100	500		1468- 0001	5W5T1	MO.5-31	1FM-31	Tone Comp
30	50	500		1468- 00005	5W5Q5	MO.5-45	1FM-45	Osc.Grid Cap
31	100	500		1468- 0001	5W5T1	MO.5-31	1FM-31	RF Coupling
32	100	500		1468- 0001	5W5T1	MO.5-31	1FM-31	Ant.Coupling

* Omit bypass section

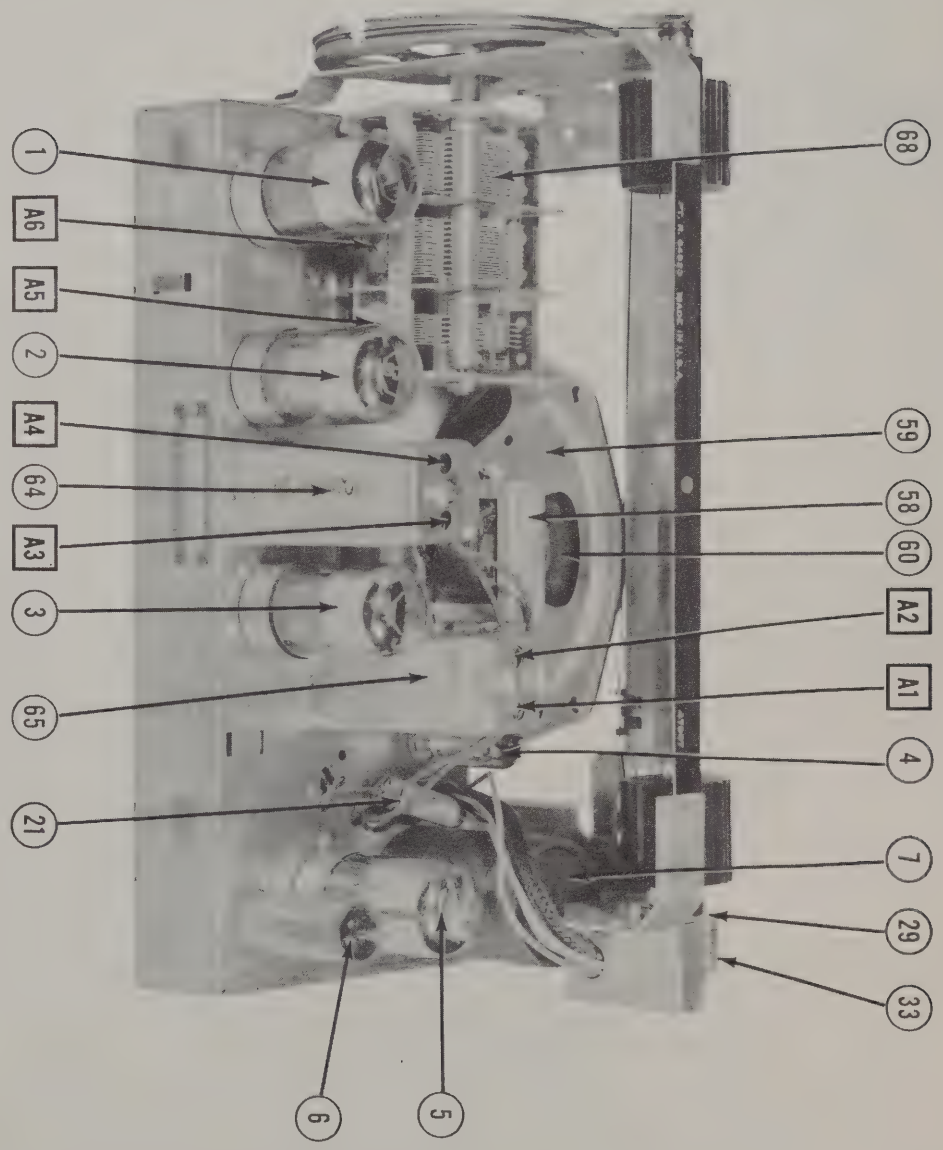
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
33	2 MEG	½	R64704			Volume Control and switch.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	IRC PART No.	IDENTIFICATION CODES	
34	3.3 MEG.	½		BTS-3.3MEG.	Or.-Or.-Grn.	RF Grid
35	2.2 MEG.	½		BTS-2.2MEG.	Red-Red-Grn.	AVC Network
36	68KΩ	½		BTS-68K	Blue-Gray-Or.	Screen Dropping
37	47KΩ	½		BTS-47K	Yl.-Vi.-Or.	Converter Screen "Dropping
38	2.2MEG.	½		BTS-2.2MEG.	Red-Red-Grn.	Converter Grid
39	180KΩ	½		BTS-180K	Br.-Gray-Yl.	Oscillator Grid
40	22KΩ	½		BTS-22K	Red-Red-Or.	Oscillator Anode Decoupling
41	3.9MEG.	½		BTS-3.9MEG.	Or.-White-Grn.	AVC Network
42	3.9MEG.	½		BTS-3.9MEG.	Or.-White-Grn.	AVC Network
43	39KΩ	½		BTS-39K	Or.-White-Or.	Tone Compensation
44	5.6MEG.	½		BTS-5.6MEG.	Grn.-Blue-Grn.	AF Grid
45	4.7MEG.	½		BTS-4.7MEG.	Yl.-Vi.-Grn.	AF Screen Dropping
46	470KΩ	½		BTS-470K	Yl.-Vi.-Yl.	AF Plate Load

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES	
	RESISTANCE	WATTS	SILVERTONE PART No.	IRC PART No.		
47	220KΩ	½		BTS-220K	Red-Red-Yl.	AF Plate Decoupling
48	1.5MEG.	½		BTS-1.5MEG.	Br.-Grn.-Grn.	Output Grid
49	820Ω	1		BTA-820	Gray-Red-Br.	Filter
50	680Ω	1		BTA-680	Blue-Gray-Br.	Bleeder
51	1600Ω	6	R64715	ABA-2000		Filament Dropping See Note
52	25Ω	2	R40232		Red-Grn.Blk.	Rectifier Ballast
53	270Ω	½		BTS270	Red-Vi.-Br.	Filament String
54	680Ω	½		BTS-680	Blue-Gray-Br.	Filament String
55	1000Ω	½		BTS-1000	Br.-Blk.-Red	Filament String
56	680Ω	½		BTS-680	Blue-Gray-Br.	Filament String
57	820Ω	½		BTS-820	Gray-Red-Br.	Filament String

Note: On IRC Replacement Set Slider at 1600Ω from one end.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		SILVERTONE PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
58	7650Ω	3.2Ω	500Ω	.6Ω	R64784	A-3978	T22847	A-2931	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			SILVERTONE PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	VC IMP.	R65157	ST-107† MOD P5-V	52A1†	† Drill and tap magnet frame.
59	PM	3.2Ω				
	CONE DIA.	VC DIA.	R62819			
60	5 1/8 "	9/16 "				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	SILVERTONE PART No.	MEISSNER PART No.	
61	Loop Ant.	0Ω	2.5Ω	R65296	14-1057	
62	RF Coil	150Ω	2Ω	R64705		
63	OSC Coil	2.3Ω	4.2Ω	R64706	16-6666	
64	Input IF	13Ω	12.5Ω	R64707		
65	Output IF	12.2Ω		R64708		

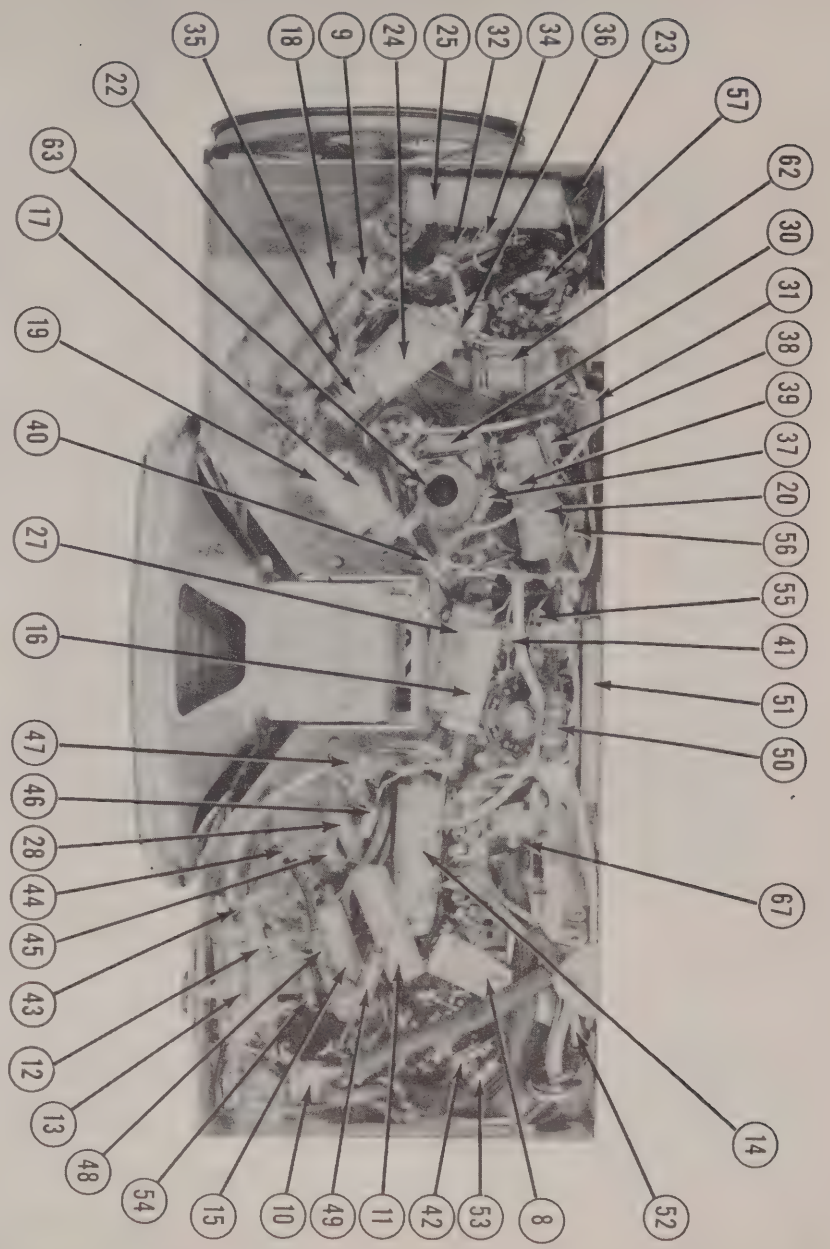
BATTERIES

ITEM No.	VOLTAGE	SILVERTONE PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
66	9V"A" 90V"B"				754			G6M60	

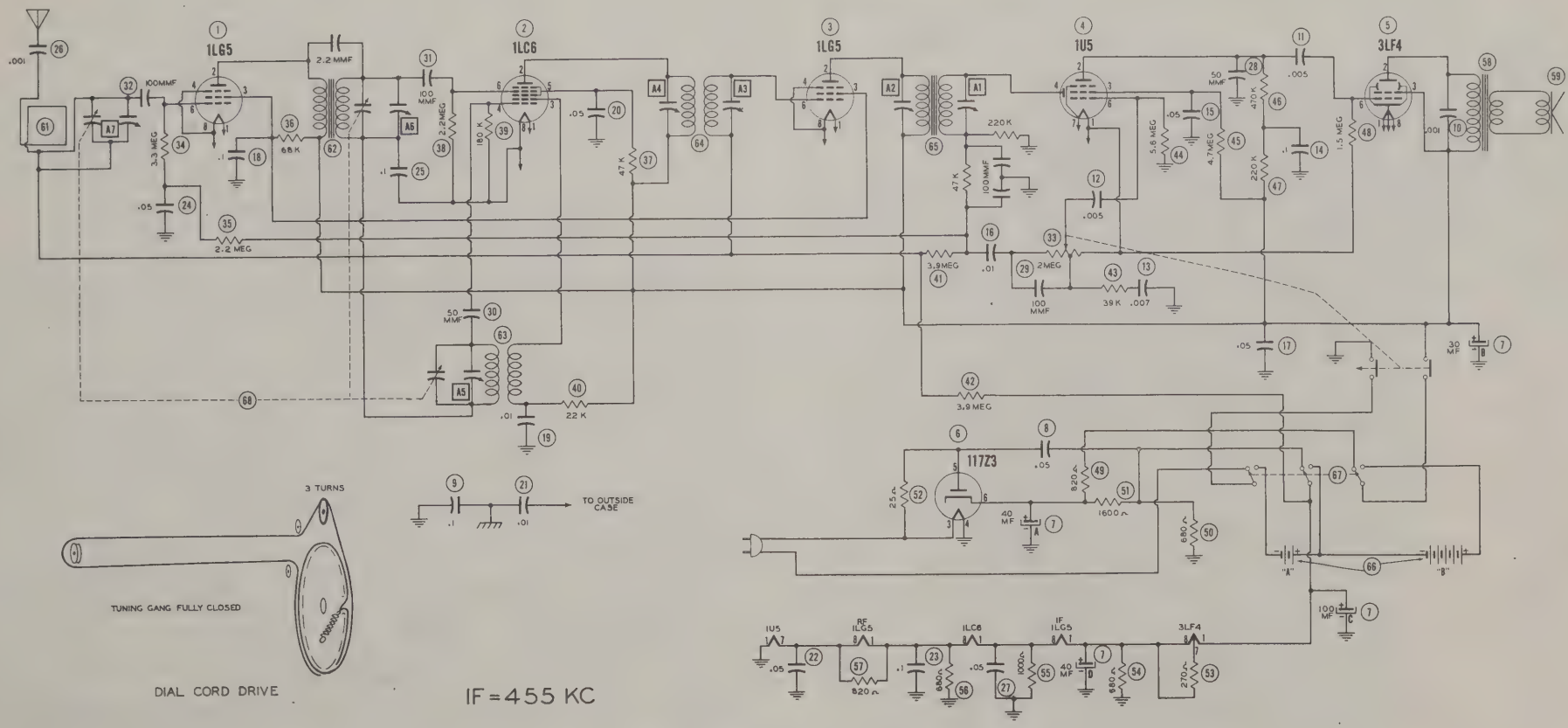
MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
67	Switch	R60813	AC/DC Battery
68	3 Gang Var. Cap.	R64716	(13-468 MMF, 34-510 MMF, 30-174 MMF)
	Dial Scale	R64823	
	Knob	R64805	
	Dial Pointer	R64721	

CHASSIS—BOTTOM VIEW



SILVERTONE, MODEL 8270A



VOLTAGE AND RESISTANCE READINGS TAKEN IN AC-DC POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	1LG5	2.9VDC	95VDC	45VDC	1.4VDC	1.4VDC	0V	0V	1.4VDC
2	1LC6	4.4VDC	95VDC	55VDC	5-4.6VDC	45VDC	.2VDC	0V	2.9VDC
3	1LG5	6VDC	95VDC	45VDC	4.4VDC	4.4VDC	.4VDC	.4VDC	4.4VDC
4	1U5	0V	30VDC	14VDC	0V	.4VDC	0V	1.4VDC	
5	3LF4	6.9VDC	90VDC	95VDC	.2VDC	0V	.2VDC	7.4VDC	6VDC
6	117Z3	0V	.4VDC	117VAC	0V	114VAC	110VDC	0V	

†TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	1LG5	∞	3KΩ	70KΩ	∞	∞	5.7 Meg.	2.6 Meg.	∞
2	1LC6	∞	3KΩ	25KΩ	180KΩ	60KΩ	2.2 Meg.	Inf.	∞
3	1LG5	∞	3KΩ	70KΩ	∞	∞	2.3 Meg.	2.3 Meg.	∞
4	1U5	0Ω	700KΩ	4.7 Meg.	220KΩ	440KΩ	5.6 Meg.	∞	
5	3LF4	∞	3KΩ	3KΩ	1.5 Meg.	0Ω	1.5 Meg.	∞	∞
6	117Z3	Inf.	2.5 Meg.	500Ω	0Ω	525Ω	2KΩ	Inf.	

*DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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495-18

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative by shorting AVC to B-.

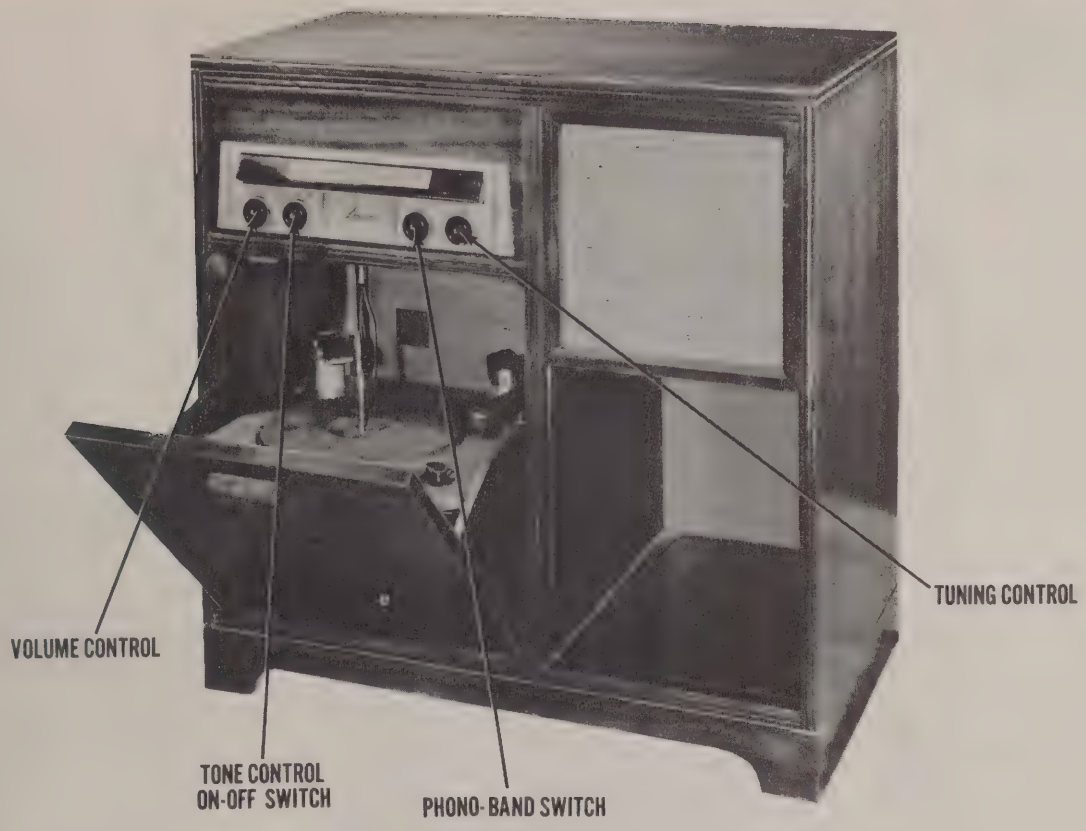
1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volts.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

*TRADE MARK

SPARTON MODELS 121, 1058, 1059, 1060, 1061, 1064, 1072 (Ch. 8L9)

SPARTON MODELS 121, 1058, 1059, 1060, 1061, 1064, 1072 (Ch. 8L9)



SPARTON MODELS 121, 1058, 1059, 1060, 1061, 1064, 1072 (Ch. 8L9)

SPARTON MODEL 1059

TRADE NAME	Sparton, Models 121, 1058, 1059, 1060, 1061, 1064, 1072 (Ch. 8L9)
MANUFACTURER	Sparks-Withington Co., Jackson, Michigan.
TYPE SET	AC operated combination phono-radio, AM-FM superheterodyne receiver with loop antenna.
TUBES(EIGHT)	Types 7F8 or 12AT7 FM RF-Mixer, 6BE6 AM Converter-FM Oscillator, 6BA6 1st IF Amp., 6BA6 2nd FM IF Amp., 6AL5 FM Detector, 6AT6 AM Det-AVC-AF., 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	110-120 Volts AC
RATING	.53 Amp. @ 117 Volts AC
TUNING RANGE	BROADCAST 535-1610KC FREQ. MOD. 88-108MC

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Disconnect phono motor plug and remove phono pickup plug at rear of chassis.
3. Remove loop leads from clips on cabinet.
4. Remove speaker leads from clips on chassis.
5. Remove two 11/32" hex nuts holding speaker. Remove speaker.
6. Remove two screws from right angle mounting brackets at rear of chassis. Remove brackets, then remove chassis.

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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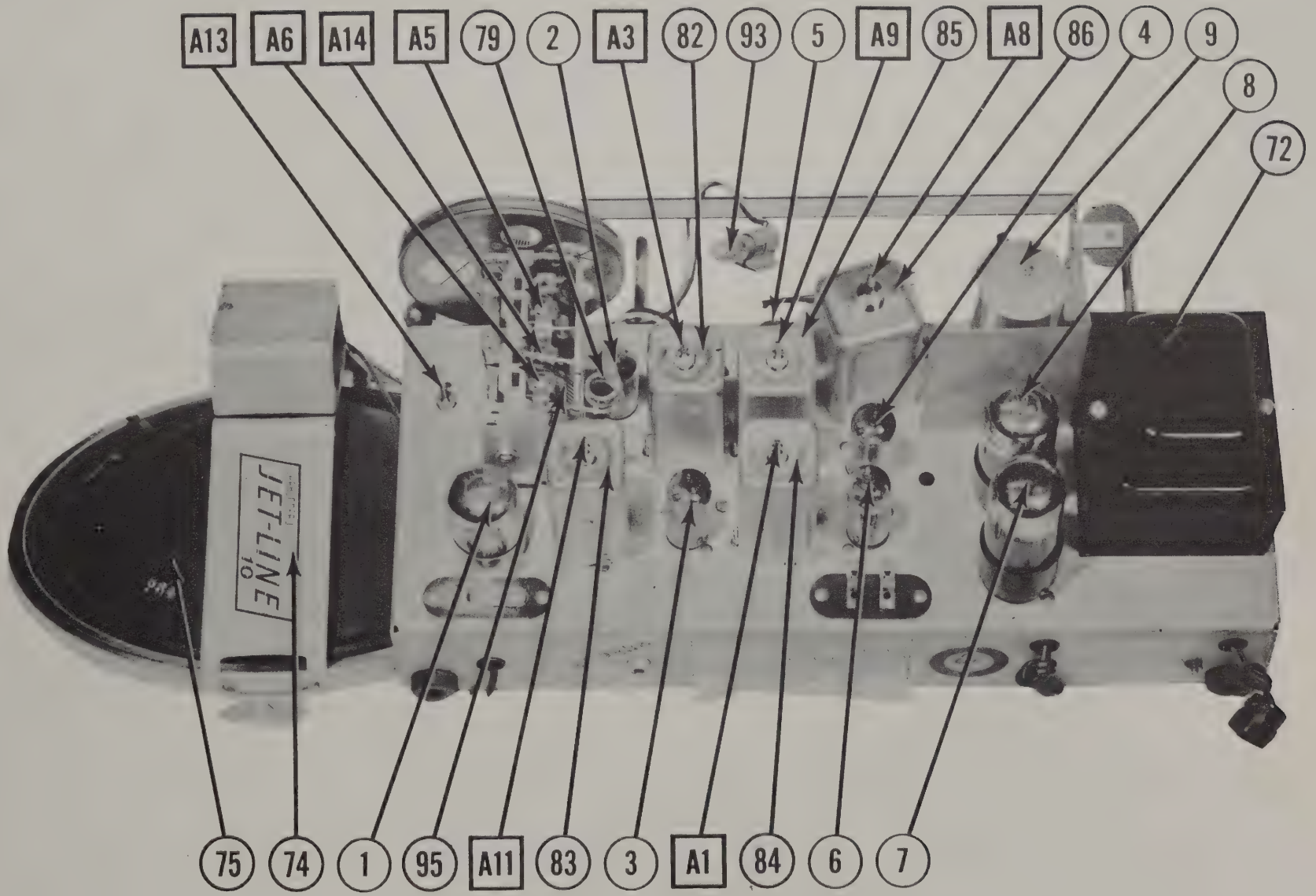
DATE 3/49-495-19 SET #57 FOLDER #19


A13
A6
A14
A5
79
2
A3
82
93
5
A9
85
A8
86
4
9
8
72
JET-LINE
10
75
74
1
95
A11
83
3
A1
84
6
7

SPARTON MODELS 121, 1058, 1059, 1060, 1061, 1064, 1072 (Ch. 8L9) PAGE 3

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SPARTON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1A	FM RF Mixer	7F8	7F8	8BW	
B	FM RF Mixer	12AT7	12AT7		
2	AM Conv.-FM Osc.	6BE6	6BE6	7CH	
3	1st IF Amp.	6BA6	6BA6	7BK	
4	FM 2nd IF	6BA6	6BA6	7BK	
5	FM Detector	6AL5	6AL5	6BT	
6	AM Det.-AVC-AF	6AT6	6AT6	7BT	
7	Power Output	6V6GT	6V6GT	7AC	
8	Rectifier	5Y3GT	5Y3GT		

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SPARTON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
9A	40	450	PA4307-4	AF862J4A*	UP431450*	DY-406*	EL-424*	● Filter
B	40	450		PRS50/50	BR255	M-25-25	TA-525	■ "
C	10	300						▲ "
D	50	50						Cathode Bypass
10	3	50	PA4308-1	PRS150/4	BR415	M-4-450	TA-55	Stabilizing Cap.
11	.002	1000	PC40GN-202	1084-002	GT16D2	STM-16-002	TR-22	Output Plate Bypass
12	20000	300	PA4330-12	484-02	GT4S2	ST-4-02	TC-12	Audio Coupling Cer. Note 1
13	10000	300	HK35G-103	484-01	GT4S1	ST-4-01	TC-11	Audio Coupling "
14	10000	300	HK35G-103	484-01	GT4S1	ST-4-01	TC-11	Tone Compensation "
15	10000	300	PA4330-14	484-01	GT4S1	ST-4-01	TC-11	" " " Note 2
16	100	300	HK35F-101	1468-0001	5W5T1	MO.5-31	1FM-31	AF Plate Bypass "
17	1000	300	HK35G-102	1468-001	1W5D1	MO.5-21	1FM-21	De-emphasis "
18	10000	300	HK35G-103	484-01	GT4S1	ST-4-01	TC-11	Diode Load Cap. "
19	1000	300	HK35G-102	1468-001	1W5D1		1FM-21	RF Bypass "
20	10000	300	PA4330-13	484-01	GT4S1	ST-4-01	TC-11	2nd IF Decoupling " See Note 3
21	10000	300	PA4330-11	484-01	GT4S1	ST-4-01	TC-11	2nd IF Cath. Byp. " See Note 4
22A	100	300	PA4329-1	1468-0001	5W5T1	MO.5-31	1FM-31	Diode Filter-Note 5 "
B	100	300		1468-0001	5W5T1	MO.5-31	1FM-31	" " "
23	1000	300	PA4334-2	1468-001	1W5D1	MO.5-21	1FM-21	1st IF Plate Decoup. "
24	10000	300	PA4334-2	484-01	GT4S1	ST-4-01	TC-11	1st IF Screen Byp. "
25	20000	300	HK35G-203	484-02	GT4S2	ST-4-02	TC-12	AVC Filter "
26	20000	300	HK35G-203	484-02	GT4S2	ST-4-02	TC-12	" " "
27	10000	300	PA4330-10	484-01	GT4S1	ST-4-01	TC-11	Conv. Decoupling " Note 6
28	10000	300	HK35G-103	484-01	GT4S1	ST-4-01	TC-11	Decoupling "
29	510	300	HK35G-511	1468-0005	5W5T5	MO.5-35	1FM-35	Osc. Anode Byp. "
30	30	300	CC30H-300K	1468-00004	5W5T4	MO.5-44	1FM-44	Osc. Grid Cap. "
31	2	300	CC30H-020K					Osc. Coupling "
32	110	300	CC30H-111A	1468-0001	5W5T1	MO.5-31	1FM-31	RF Coupling "
33	5	500	HK35G-102	1469-000005	5R5V5	MOS.5-55	MS-55	Fixed Trimmer
34	2	300	CC30H-020K					Osc. Grid Cap. "
35	110	300	CC30H-111A	1468-0001	5W5T1	MO.5-31	1FM-31	RF Coupling "
36	110	300	CC30H-111A	1468-0001	5W5T1	MO.5-31	1FM-31	" " "
37	5000	300	HK35G-502	484-005	GT6D5	ST-6-005	TC-25	AVC Filter "
38	510	300	HK35G-511	1468-0005	5W5T5	MO.5-35	1FM-35	RF Cathode Byp. "
39	110	300	CC30H-111A	1468-0001	5W5T1	MO.5-31	1FM-31	FM Ant. Coupling "
40	110	300	CC30H-111A	1468-0001	5W5T1	MO.5-31	1FM-31	Ant. Isolation "

*Parallel sections to obtain desired capacity.
Note 1-Item 12 and 68 are combined into one unit obtainable under manufacturers Part #PA4330-12.
Note 2-Item 15 and 66 are combined into one unit obtainable under manufacturers Part #PA4330-14.
Note 3-Item 20 and 59 are combined into one unit obtainable under manufacturers Part #PA4330-13.
Note 4-Item 21 and 58 are combined into one unit obtainable under manufacturers Part #PA4330-11.
Note 5-Item 22A&B and 56 are combined into one unit obtainable under manufacturers Part #PA4329-1.
Note 6-Item 27 and 50 are combined into one unit obtainable under manufacturers Part #PA4330-10.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SPARTON PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.	INSTALLATION NOTES
73	5000Ω	3.5Ω	380Ω	.3Ω	AB44061-1	A-3849	T22S87	A-2902	

SPEAKER

ITEM No.	RATINGS: FIELD	RATINGS: VC IMP.	REPLACEMENT DATA: SPARTON PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
74A B	PM	3.5Ω	PC63000-20 PC63000-19§	ST-120#† Mod. P10-S	10A31#	Used in console models. #Drill new mounting holes. †Replace output trans. to match 6-8Ω voice coil.
	CONE DIA.	VC DIA.				
75	9½"	1"				

§ Used in table models.

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: SPARTON PART No.	MEISSNER PART No.
76	Loop Ant.		0Ω	AC-67020-1	
77	Loop Load. Coil		1.5Ω	AA6686-5	
78	FM Dipole Ant.		0Ω		
79	FM RF Coil		0Ω	PA5200-5	
80	AM Osc.Coil	.5Ω	4Ω	AA6665-1	14-1060
81	FM " "		0Ω	PA5200-4	
82	AM 1st IF	9.5Ω	10Ω	AA6668-5	
83	FM 1st IF	.8Ω	.8Ω	AA6667-2	
84	AM 2nd IF	10.5Ω	10.5Ω	AA6668-2	
85	FM 2nd IF	.8Ω	.8Ω	AA6667-4	
86	Ratio Det.	1.5Ω	.8Ω	AA6684-1	
87	RF Choke		0Ω	AA6798-3	
88	" "		0Ω	AA6798-4	
89	" "		0Ω	AA6798-5	
90	" "		0Ω	AA6798-5	
91	" "		0Ω	AA6798-2	
92	Line Choke	0Ω	.2Ω	AA6664-1	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: SPARTON PART No.		INSTALLATION NOTES
93	Bayonet	6-8	0.25	Blue			Type #44

MISCELLANEOUS

ITEM No.	PART NAME	SPARTON PART No.	NOTES
94	Switch	PA4610	Band
95	2 Gang Var. Cap.	PC65002	(22-523MMF, 35-215MMF)
A13	Trimmer	PA4366	FM Osc. Adj.
	Dial Pointer	PA5409	
	Knob	PA5625-1	

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	SPARTON PART No.	IRC PART No.	CLAROSTAT PART No.	
41A	1 Meg.	½	PA4408-2	D18-137X	AT-103	Volume Control tapped @ 100KΩ
B	Shaft		Not Req.	E	KSS-3	Attach to 41A per instructions
42A	1 Meg.	½	PA4400-10	D13-137	AM-63-Z	Tone Control
B	Shaft		Not Req.	E	KSS-3	Attach to 42A per instructions
C	Switch		" "	47	SW-A6	" " " "

RESISTORS

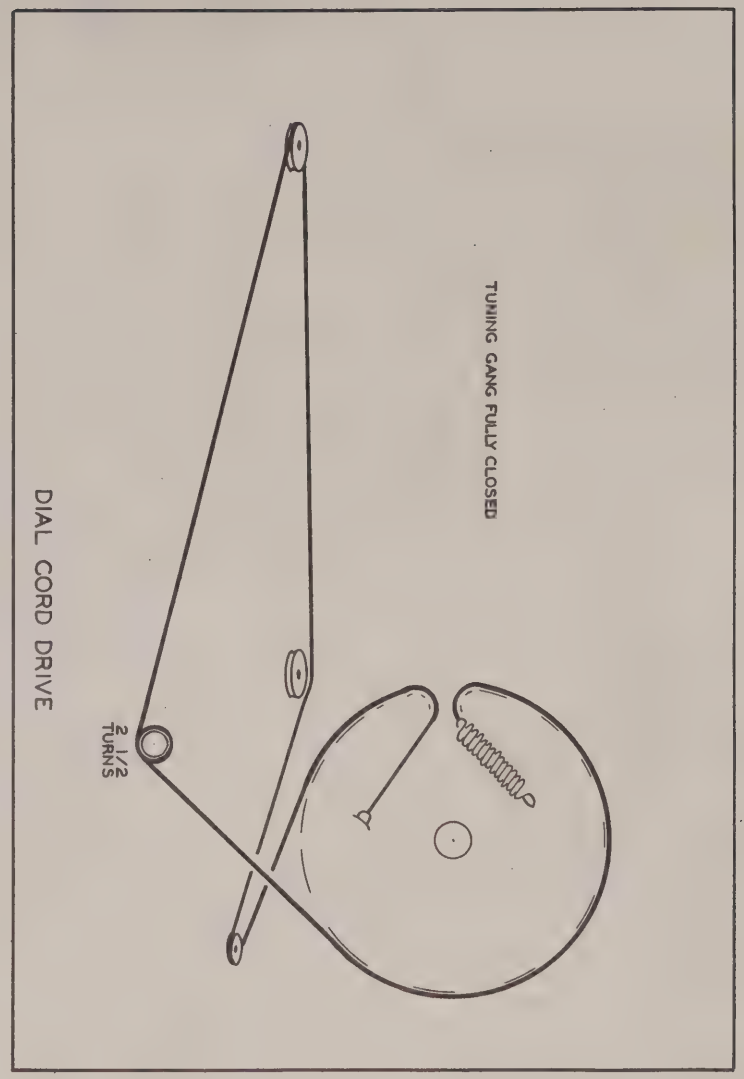
ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	SPARTON PART No.	IRC PART No.	
43	3300Ω	½	BR12S-332	BTS-3300	Or.-Or.-Red Series External Antenna
44	2.2 Meg.	½	BR12S-225	BTS-2.2 Meg.	Red-Red-Grn. AM Conv. Grid
45	22KΩ	½	BR12S-223	BTS-22K	Red-Red-Or. Osc. Grid
46	470Ω	½	BR12S-471	BTS-470	Yl.-Vi.-Br. FM RF Cathode
47	2.2 Meg.	½	BR12S-225	BTS-2.2 Meg.	Red-Red-Grn. FM RF Grid
48	470KΩ	½	BR12S-474	BTS-470K	Yl.-Vi.-Yl. FM RF Grid
49	470KΩ	½	BR12S-474	BTS-470K	Yl.-Vi.-Yl. FM Mixer Grid
50	470Ω	½		BTS-470	Decoupling-See Note 6
51	470KΩ	½	BR12S-474	BTS-470K	Yl.-Vi.-Yl. AVC Network
52	68Ω	½	BR12S-680		Blue-Gray-Blk. 1st IF Cathode
53	1000Ω	½	BR12-102	BTS-1000	Br.-Blk.-Red 1st IF Screen
54	1000Ω	½	BR12-102	BTS-1000	Br.-Blk.-Red 1st IF Plate Decoupling
55	1 Meg.	½	BR12S-105	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
56	47KΩ	½		BTS-47K	Diode Filter-See Note 5
57	1 Meg.	½	BR12-105	BTS-1 Meg.	Br.-Blk.-Grn. Diode Load
58	68Ω	½			2nd IF Cathode-See Note 4
59	1000Ω	½		BTS-1000	2nd IF Decoupling-See Note 3
60	47KΩ	½	BR12S-473	BTS-47K	Yl.-Vi.-Or. De-emphasis
61	470Ω	½	BR12S-471	BTS-470	Yl.-Vi.-Br. Balancing Resistor
62	220Ω	½	BR12S-221		Red-Red-Br. " "
63	15KΩ	½	BR12S-153	BTS-15K	Br.-Grn.-Or. Ratio Det. Diode Load
64	220KΩ	½	BR12S-224	BTS-220K	Red-Red-Yl. AVC Network
65	3.3 Meg.	½	BR12S-335	BTS-3.3 Meg.	Or.-Or.-Grn. Bias
66	22KΩ	½		BTS-22K	Tone Compensation-See Note 2
67	15 Meg.	½	BR12S-156	BTS-15 Meg.	Br.-Grn.-Blue AF Grid
68	220KΩ	½		BTS-220K	AF Plate Load-See Note 1
69	330Ω	1	CR12S-331	BW-1-330	Or.-Or.-Br. Output Cathode
70	3500Ω	10	PA4200-8	AB-3500	Filter
71	470Ω	2	DR12S-471	BT-2-470	Yl.-Vi.-Br. "

Note 1-Item 68 & 12 are combined into one unit obtainable under manufacturers Part #PA4330-12.
Note 2-Item 66 & 15 are combined into one unit obtainable under manufacturers Part #PA4330-14.
Note 3-Item 59 & 20 are combined into one unit obtainable under manufacturers Part #PA4330-13.
Note 4-Item 58 & 21 are combined into one unit obtainable under manufacturers Part #PA4330-11.
Note 5-Item 56 and 22A & B are combined into one unit obtainable under manufacturers Part #PA4329-1.
Note 6-Item 50 and 27 are combined into one unit obtainable under manufacturers Part #PA4330-10.

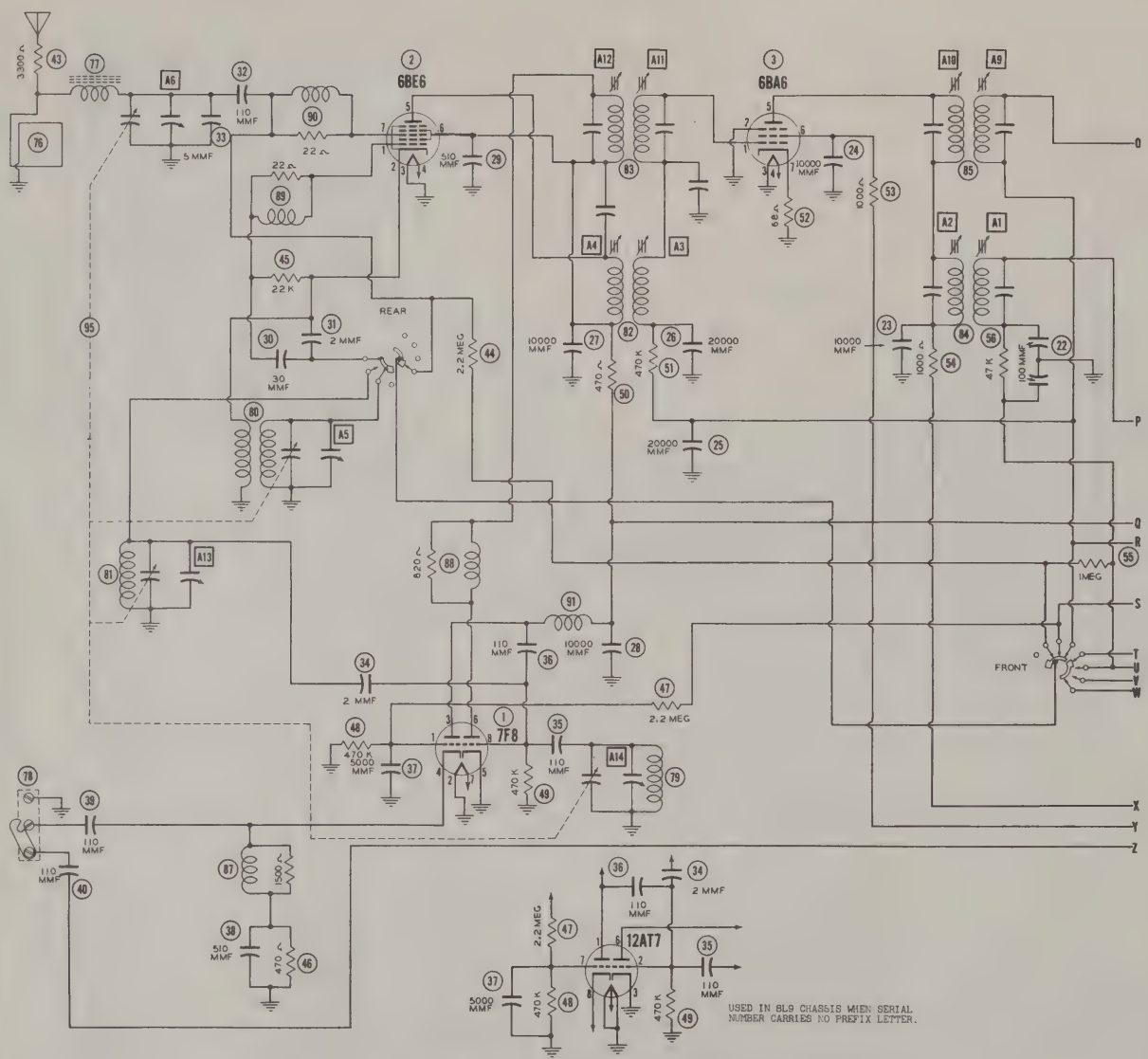
TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	SPARTON PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
72	117V AC @ .53A	500V CT @ .08A DC	4.8V AC @ 2.0A	6.6V AC @ 2.5A	AB44013-1	P-6312#	T22R04#	P-2952#‡

‡Add series resistor to reduce plate voltage.
#Drill new mounting holes.



DATE 3/49-495-19 SET #57 FOLDER 19



VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1§	7F8	0V	0V	105VDC	1VDC	0V	100VDC	6.6VAC	
2A	6BE6	§-5.4VDC	0V	6.6VAC	0V	105VDC	103VDC	-.5VDC	
2§	6BE6	§-5.6VDC	0V	6.6VAC	0V	100VDC	100VDC	-.7VDC	
3	6BA6	-.1VDC	0V	6.6VAC	0V	230VDC	105VDC	1.1VDC	
4	6BA6	.4VDC	0V	6.6VAC	0V	100VDC	90VDC	1.1VDC	
5	6AL5	.3VDC	-.2VDC	6.6VAC	0V	-.4VDC	0V	.1VDC	
6	6AT6	-.2VDC	0V	6.6VAC	0V	-.1VDC	-.1VDC	70VDC	
7	6V6GT	0V	6.6VAC	245VDC	235VDC	0V	105VDC	0V	12.5VDC
8	5Y3GT	0V	260VDC	0V	250VAC	0V	250VAC	0V	260VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1§	7F8	400KΩ	0Ω	250KΩ	25Ω	0Ω	250KΩ	.1Ω	470KΩ
2A	6BE6	22KΩ	.5Ω	.1Ω	0Ω	250KΩ	250KΩ	3.5 Meg.	
2§	6BE6	22KΩ	.5Ω	.1Ω	0Ω	250KΩ	250KΩ	4 Meg.	
3	6BA6	3.1 Meg.	0Ω	.1Ω	0Ω	250KΩ	250KΩ	68Ω	
4	6BA6	210KΩ	0Ω	.1Ω	0Ω	250KΩ	250KΩ	68Ω	
5	6AL5	470Ω	15KΩ	.1Ω	0Ω	1.1 Meg.	0Ω	1.1 Meg.	
6	6AT6	15 Meg.	0Ω	.1Ω	0Ω	580KΩ	1.5 Meg.	370KΩ	
7	6V6GT	0Ω	.1Ω	250KΩ	250KΩ	1 Meg.	250KΩ	0Ω	330Ω
8	5Y3GT	Inf.	250KΩ	Inf.	95Ω	Inf.	88Ω	Inf.	250KΩ

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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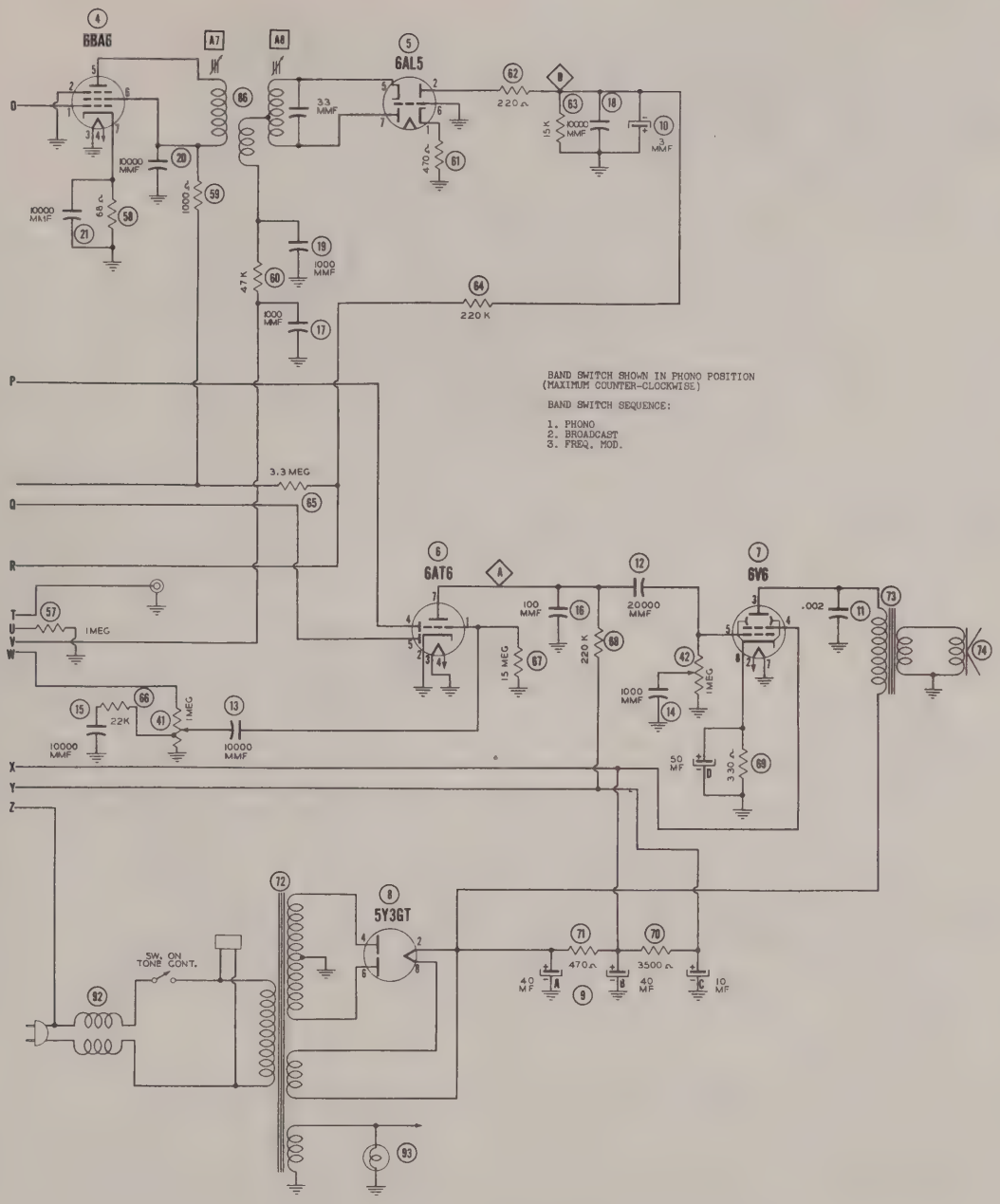

IF = 456 KC AM

IF = 10.7 MC FM

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ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial.

Use insulated alignment screwdriver for adjusting.

Dummy antenna consists of a 200 MMFD cap. in series with a 20 Microhenry choke, the choke being shunted by a 400 MMFD cap. in series with a 100Ω carbon resistor.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.02 MFD	High side to Pin 7 (grid) of 6BE6. Low side to chassis.	456KC	AM (Center position)	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4	Adjust for maximum output
2	Dummy Ant.	High side to ext AM Ant. lead. Low side to chassis.	1500KC	"	1500KC	"	A5	" " " "
3	"	"	"	"	Tune for maximum output.	"	A6	Adjust for maximum output. Check calibration at 600KC, 1000KC and 1500KC.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep.

Connect the synchronized sweep voltage from the signal generator to the horizontal input of scope. This voltage may be taken from the power line if signal generator does not have a sync. voltage output. There may be some phase shift encountered between signal generator and scope horizontal sweep. If provision is made for this in the scope, rotate phase control until a single trace pattern is obtained. If no provision is made for this, the same thing may be accomplished by shunting a .05 MFD capacitor from scope horizontal input to ground and inserting a 250KΩ potentiometer in series with the horizontal input. Adjustment of this potentiometer should produce coincidence of the two curves.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4	.05 MFD	High side to Pin 1 (grid) of 6BA6 FM Driver Tube (4). Low side to chassis.	10.7MC (Freq. Mod.)	FM (Clockwise)	Tuning cap. fully open.	Vertical input in series with .1 MFD cap. to Point (A) .Ground to chassis	A7,A8	Alternately adjust A7 for maximum amplitude and straightness of diagonal line and A8 for placement of center of diagonal li on horizontal sweep line per figure 1.
5	.05 MFD	High side to Pin 1 (grid) of 6BA6 1st IF Tube (3). Low side to chassis.	"	"	"	"	A9,A10	Adjust for maximum amplitude and straightness of diagonal line of pattern per Fig. 1.
6	.05 MFD	High side to Pin 8 (grid) of 7F8. (Pin 2 of 12AT7) Low side to chassis.	"	"	"	"	A11,A12	Adjust for maximum amplitude and straightness of diagonal line of pattern per Fig. 1. Continue with FM-RF Alignment in Step 8.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND

Use low range output meter and attenuate output of signal generator to maintain approximately maximum reading on meter.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
4	.02 MFD	High side to Pin 1 (grid) of 6BA6 FM Driver Tube (4). Low side to chassis.	10.7MC (400 ∿ Amp. Mod.)	FM (Clockwise)	Tuning cap. fully open.	Across voice coil	A7,A8	Adjust for maximum output
5	.02 MFD	High side to Pin 1 (grid) of 6BA6 1st IF Tube (3). Low side to chassis.	"	"	"	"	A9,A10	" " " "
6	.02 MFD	High side to Pin 8 (grid) of 7F8. (Pin 2 of 12AT7) Low side to chassis.	"	"	"	"	A11, A12	" " " "
7	.02 MFD	"	"	"	"	"	A8	Adjust for minimum output. Continue with FM-RF Alignment in Step 8.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8	300Ω carbon res.	High side to center FM Ant. terminal. Low side to chassis.	106MC (Unmodulated)	FM	106MC	DC probe to Point (B) .Common to chassis	A13	Adjust for maximum deflection.
9	"	"	"	"	Tune for maximum deflection.	"	A14	Rock tuning cap. and adjust for maximum deflection. Check calibration at 88MC.

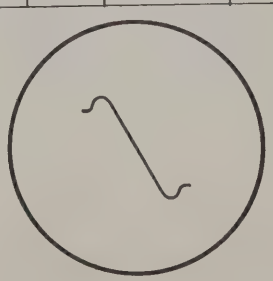

FIG. 1

STROMBERG-CARLSON MODELS
1200, 1400

STROMBERG-CARLSON, MODEL 1400

TRADE NAME	Stromberg-Carlson, Models 1200, 1400
MANUFACTURER	Stromberg-Carlson Co., 100 Carlson Rd., Rochester 3, N. Y.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Ant.
TUBES (FIVE)	Types 12BA6 RF Amp., 12BE6 Converter, 12BA6 IF Amp., 12AT6 DET-AVC-AF, 50L6GT Power Output.
POWER SUPPLY	110-120 Volts AC-DC RATING .26 Amp., @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1640 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not connect a .1 MFD. cap. in series with low side of signal generator and B-.
Use no more signal input than is necessary to obtain satisfactory meter reading.
Use an insulated alignment screwdriver for adjusting.

IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Use 3 volt DC range on VTVM.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	.01 MFD	High side to pin 7 (Grid) of 6BE6 tube. Low side to B-.	455KC	Tuning Cap fully closed	DC Probe to point (A) Common to B-.	A1, A2 A3, A4	Adjust for maximum deflection.

IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 15KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
1.	.01 MFD	High side to pin 7 (Grid) of 6BE6 tube. Low side to B-.	455KC (freq.mod.	Tuning Cap fully closed	Vertical input to point (B). Ground to B-.	A1, A2 A3, A4	Adjust for maximum amplitude, symmetry and coincidence of pattern per Fig 1.

RF ALIGNMENT

Use 3 volt DC range on VTVM.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
2.	.01 MFD	High side to external Antenna terminal. Low side to B-.	1650KC	Tuning Cap fully open	DC Probe to point (A) Common to B-.	A5	Adjust for maximum deflection.
3.	.01 MFD	High side to external Antenna terminal. Low side to B-.	1400KC	Tune for maximum deflection.	DC Probe to point (A) Common to B-.	A6, A7	Adjust for maximum deflection.

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DATE 3/49 #495-20 SET #57 FOLDER #20

PARTS LIST AND DESCRIPTIONS

STROMBERG CARLSON
MODEL 1200

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: STROMBERG-CARLSON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1.	RF Amp.	12BA6	12BA6	7BK	
2.	Converter	12BE6	12BE6	7CH	
3.	IF Amp.	12BA6	12BA6	7BK	
4.	DET-AVC-AF	12AT6	12AT6	7BT	
5.	Power Output	50L6GT	50L6GT	7AC	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: STROM CARLSON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	200	111032	AF88J§	UP6BJ35	DY-2x40-450§	EL-245	■ Filter
B	40	200						▲ Filter
7	.05	400	40632	484-05	GT4S5	ST-4-05	TC-15	Line Filter
8	.05	400	40632	484-05	GT4S5	ST-4-05	72P1	Line Isolation
9	.05	400	40632	484-05	GT4S5	ST-4-05	TC-15	Ouput Plate Bypass
10	.005	600	27760	684-005	GT6D5	ST-6-005	TC-25	Audio Coupling
11	.005	600	110419	684-005	GT6D5	ST-6-005	TC-25	Audio Coupling
12	.05	400	40632	484-05	GT4S5	ST-4-05	TC-15	AVC Filter
13	470	300	110464	1468-0005	5W5T5	M05-35	1FM-35	AF Plate Bypass Cer.
14A	100	300	‡	1468-0001	5W5T1	M05-31	1FM-31	RF Diode Filter Cer.
B	100	300		1468-0001	5W5T1	M05-31	1FM-31	RF Diode Filter Cer.
15	47	300	110458	1468-00005	5W5Q5	M05-45	1FM-45	Osc. Grid Cap Cer.

§-Install new mounting plate.
‡ Item 14A, 14B and 22 are combined into one unit obtainable under Mfgrs. Part #110478

CONTROLS

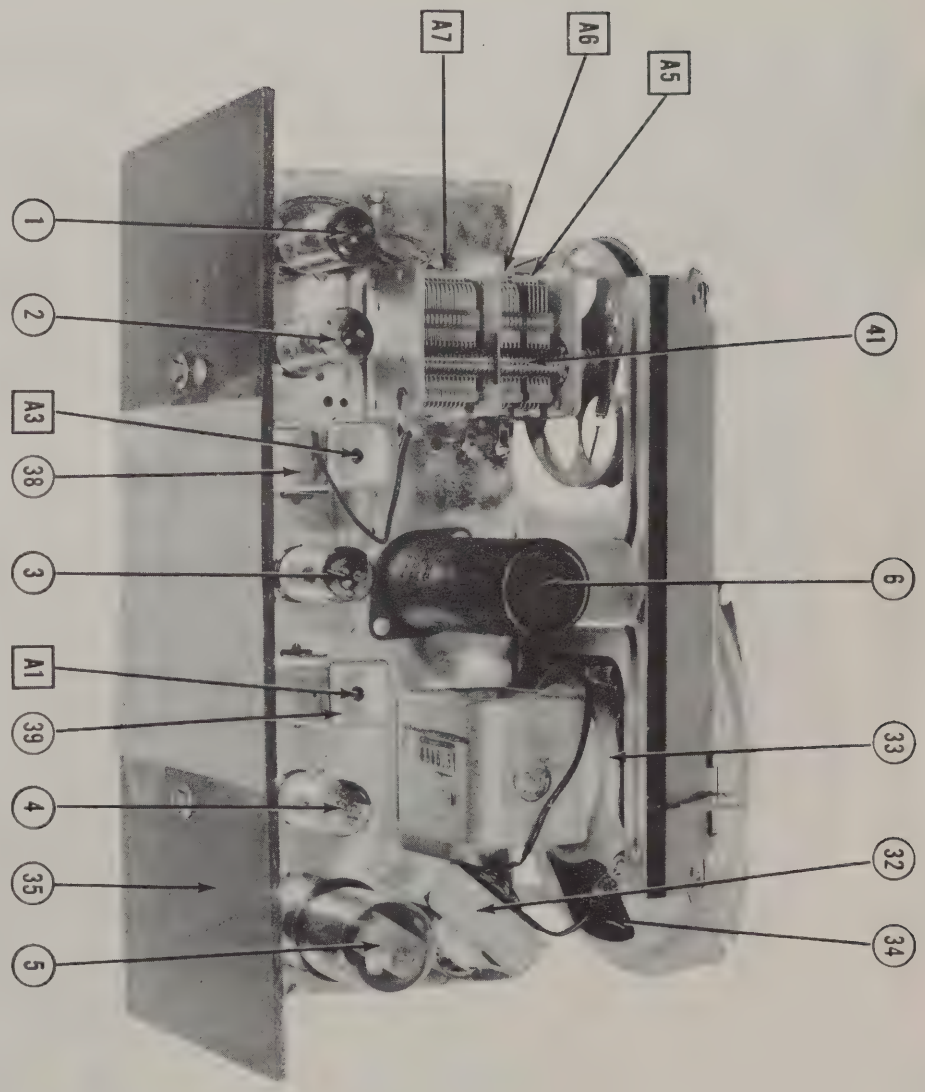
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: STROMBERG CARLSON PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
16A	1 Meg.	½	145032	D13-137	M-63-Z	Volume Control
B	Shaft		Not Req.	A	Not Req.	Attach to 16A Per Instructions.
C	Switch		Not Req.	41	SW-A	Attach to 16A Per Instructions.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: STROM.CARLSON PART No.	IRC PART No.	IDENTIFICATION CODES		
17	2200Ω	½	28162	BTS-2200	Red-Red-Red	RF Coil Shunt	See Note 1
18	22KΩ	½	149109	BTS-22K	Red-Red-Or.	Osc. Grid	
19	10 Meg.	½	149125	BTS-10 Meg.	Br.-Blk.-Blue	Osc. Grid	See Note 1
20	2.2 Meg.	½	149121	BTS-2.2 Meg.	Red-Red-Grn.	AVC Net	
21	2.2 Meg.	½	149121	BTS-2.2 Meg.	Red-Red-Grn.	AVC Net	
22	47KΩ	½	‡	BTS-47K		Diode Filter	
23	10 Meg.	½	149125	BTS-10 Meg.	Br.-Blk.-Blue	AF Grid	
24	330KΩ	½	149116	BTS-330K	Or.-Or.-Yl.	AF Plate Load	
25	470KΩ	½	149117	BTS-470K	Yl.-Vi.-Yl.	Output Grid	
26	150Ω	½	149168	BW-½-150	Br.-Grn.-Br.	Output Cathode	
27	1800Ω	2	149047	BT-2-1800	Br.-Gray-Red	Filter	
28	27Ω	2	149244		Red-Vi.-Blk.	Surge Limiter	
29	22Ω	½		BW-½-22	Red-Red-Blk.	Line Dropping	See Note 2
30	82Ω	2		BW-2-82	Gray-Red-Blk.	Line Dropping	See Note 1
31	220KΩ	½	149115	BTS-220K	Red-Red-Yl.	Line Isolation	

Note 1. Not used in all models.
Note 2. Some models may use special NTC in this application.
‡ Items 22, 14A & B are combined into one unit obtainable under part #110478.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		STROMBERG, CARLSON PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
32	16002	3.02	1682 Tap @ 82	.62	161413	A-3330		A-3031	

SPEAKER

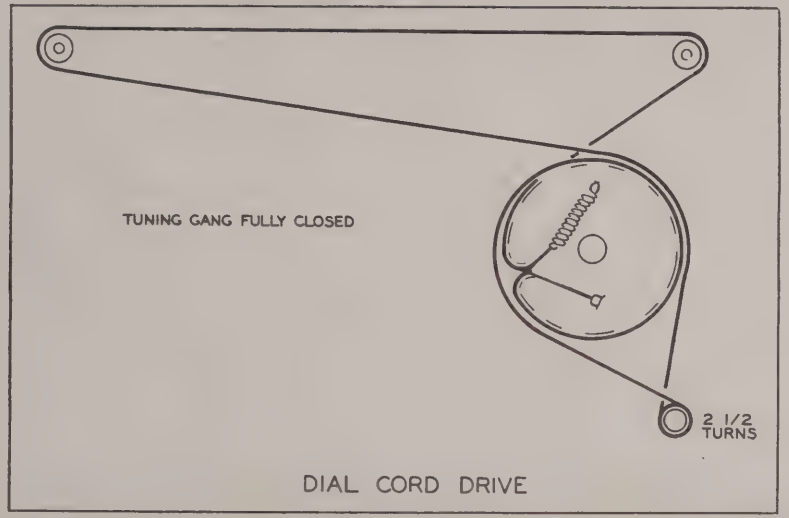
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			STROMBERG-CARLSON PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V C Imp.		ST-107†		† Drill and tap magnet frame.
33.	PM	3.02	155013	MODP5-V	52A21†*	* Trim flange.
	CONE DIA	V C DIA				
34.	5 1/4"	3/4"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	STROMBERG CARLSON PART No.	MEISSNER PART No.	
35	Loop Ant.		2Ω	139020		
36	RF Coil	1Ω	8Ω	114046		
37	Osc. Coil	.5Ω	6.5Ω	114047	14-1060	
38	Input IF	18Ω	20Ω	114336	16-6678	
39	Output IF	14Ω	13.5Ω	114337	16-6678	

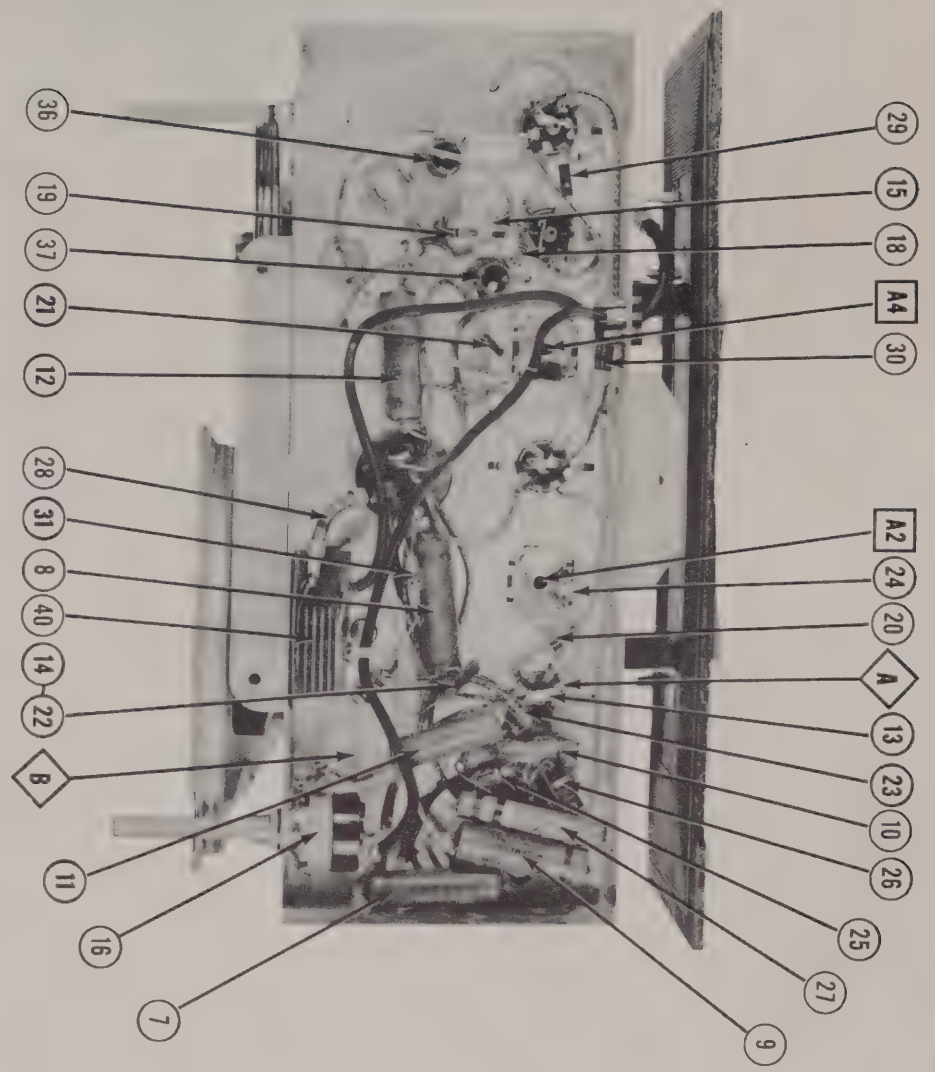
MISCELLANEOUS

ITEM No.	PART NAME	STROMBERG CARLSON PART No.	NOTES
40	Rectifier	162034	Selenium
41	3 Gang Var. Cap.	110026	(35-467MMF, 19-247MMF, 14-204MMF)
	Dial Pointer	144013	
	Dial	122022	



DIAL CORD DRIVE

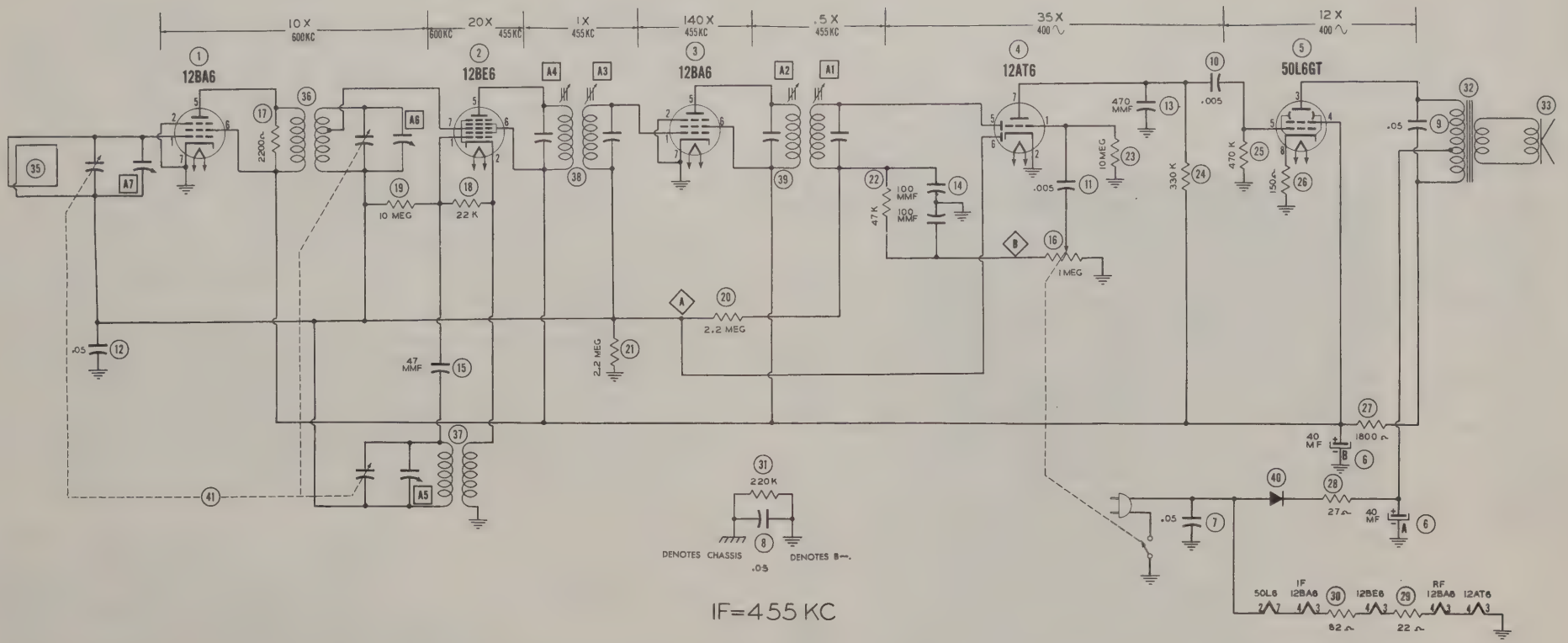
CHASSIS—BOTTOM VIEW



STROMBERG CARLSON MODEL 1200

DATE 3/49 #495-20 SET #57 FOLDER #20

STROMBERG CARLSON MODEL 1200



IF=455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12BA6	-.1VDC	0V	13VAC	27VAC	85VDC	85VDC	0V	
2	12BE6	6-7.4VDC	0V	31VAC	43VAC	85VDC	85VDC	-.1VDC	
3	12BA6	-.1VDC	0V	55VAC	70VAC	85VDC	85VDC	0V	
4	12AT6	-.4VDC	0V	0V	13VAC	-.6VDC	-.1VDC	80VDC	
5	50L6GT	140VDC	117VAC	135VDC	85VDC	0V	0V	70VAC	5.4VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12BA6	1.1 Meg.	0Ω	13Ω	26Ω	22KΩ	22KΩ	0Ω	
2	12BE6	22KΩ	.5Ω	48Ω	80Ω	22KΩ	22KΩ	1.1 Meg.	
3	12BA6	1.1 Meg.	0Ω	140Ω	150Ω	22KΩ	22KΩ	0Ω	
4	12AT6	10 Meg.	0Ω	0Ω	13Ω	900KΩ	1.1 Meg.	350KΩ	
5	50L6GT	20KΩ	200Ω	20KΩ	22KΩ	470KΩ	0Ω	150Ω	150Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

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495-20

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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TELE-TONE
MODEL TV249

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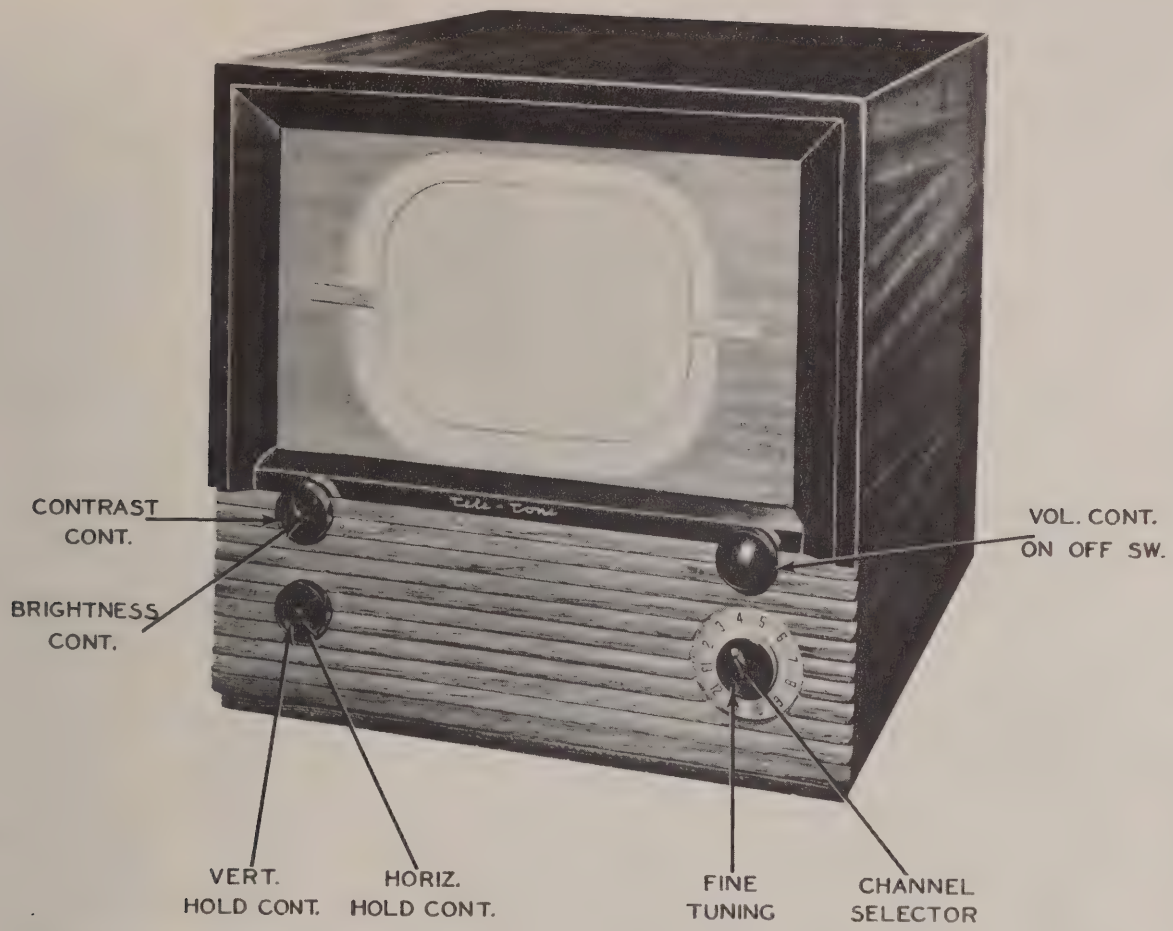

TELE-TONE
MODEL TV-249

TRADE NAME	Tele-Tone, Model TV-249
MANUFACTURER	Tele-Tone Radio Corp. 540 West 58th St., New York 19, N. Y.
TYPE SET	Television Receiver
TUBES	Twenty
POWER SUPPLY	110-120 Volts, 60 cycle AC. RATING 1.88 Amps @ 117 Volts
TUNING RANGE—	Channels 2 through 13

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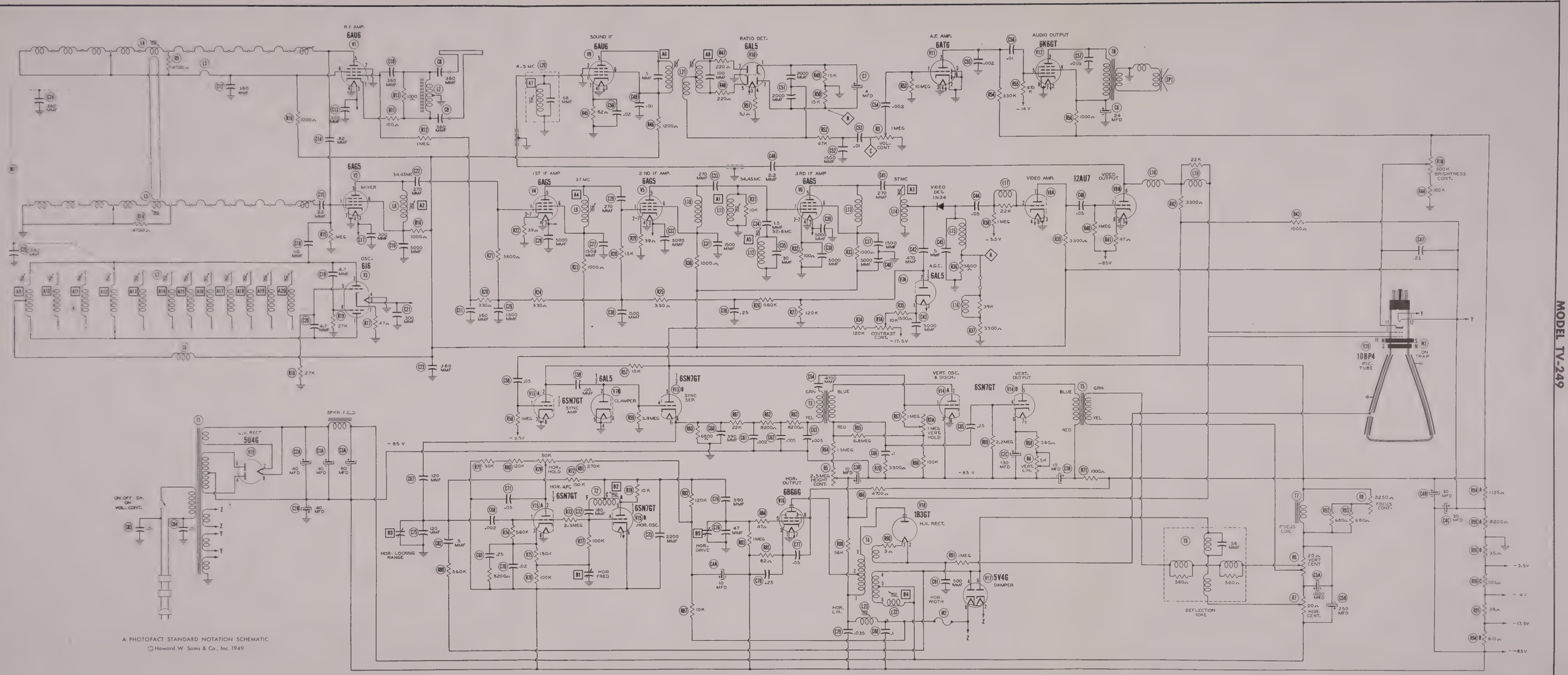
TELE-TONE
MODEL TV-249
R.F. AMP. 6AU6
SOUND IF 6AU6
RATIO DET. 6AL5
A.F. AMP. 6AT6
AUDIO OUTPUT 6K6GT
MIXER 6AG5
OSC. 6J6
1ST IF AMP 6AG5
2ND IF AMP. 6AG5
3RD IF AMP 6AG5
VIDEO DET. 1N34
VIDEO AMP. 12AU7
VIDEO OUTPUT
A.G.C. 6AL5
CONTRAST CONT.
BRIGHTNESS CONT.
10BP4 PIC. TUBE
ION TRAP
SYNC AMP 6SN7GT
CLAMPER 6AL5
SYNC SEP. 6SN7GT
VERT. OSC. & DISCH. 6SN7GT
VERT. OUTPUT 6SN7GT
VERT. LIN.
VERT. HOLD
HEIGHT CONT.
HOR. OUTPUT 6BG6G
H.V. RECT. 1B3GT
DAMPER 5V4G
HOR. OSC. 6SN7GT
HOR. HOLD
HOR. APC
HOR. LOCKING RANGE
HOR. FREQ
HOR. DRIVE
HOR. LIN.
HOR. WIDTH
FOCUS COIL
FOCUS CONT.
HOR. CENT.
VERT. CENT.
DEFLECTION YOKE
L.V. RECT. 5U4G
SPKR FED
ON-OFF SW. ON VOL. CONT.
- 85 V
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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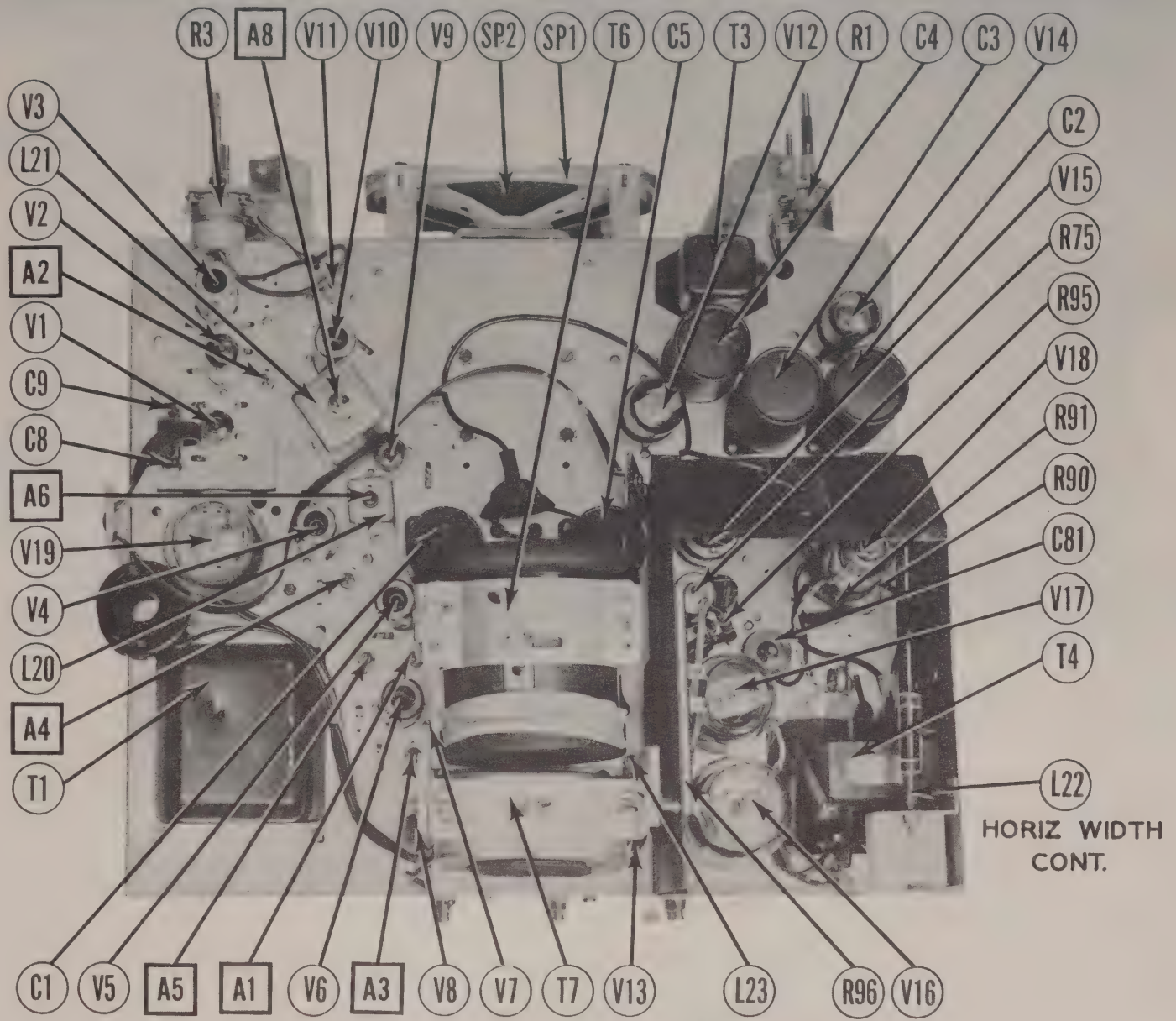
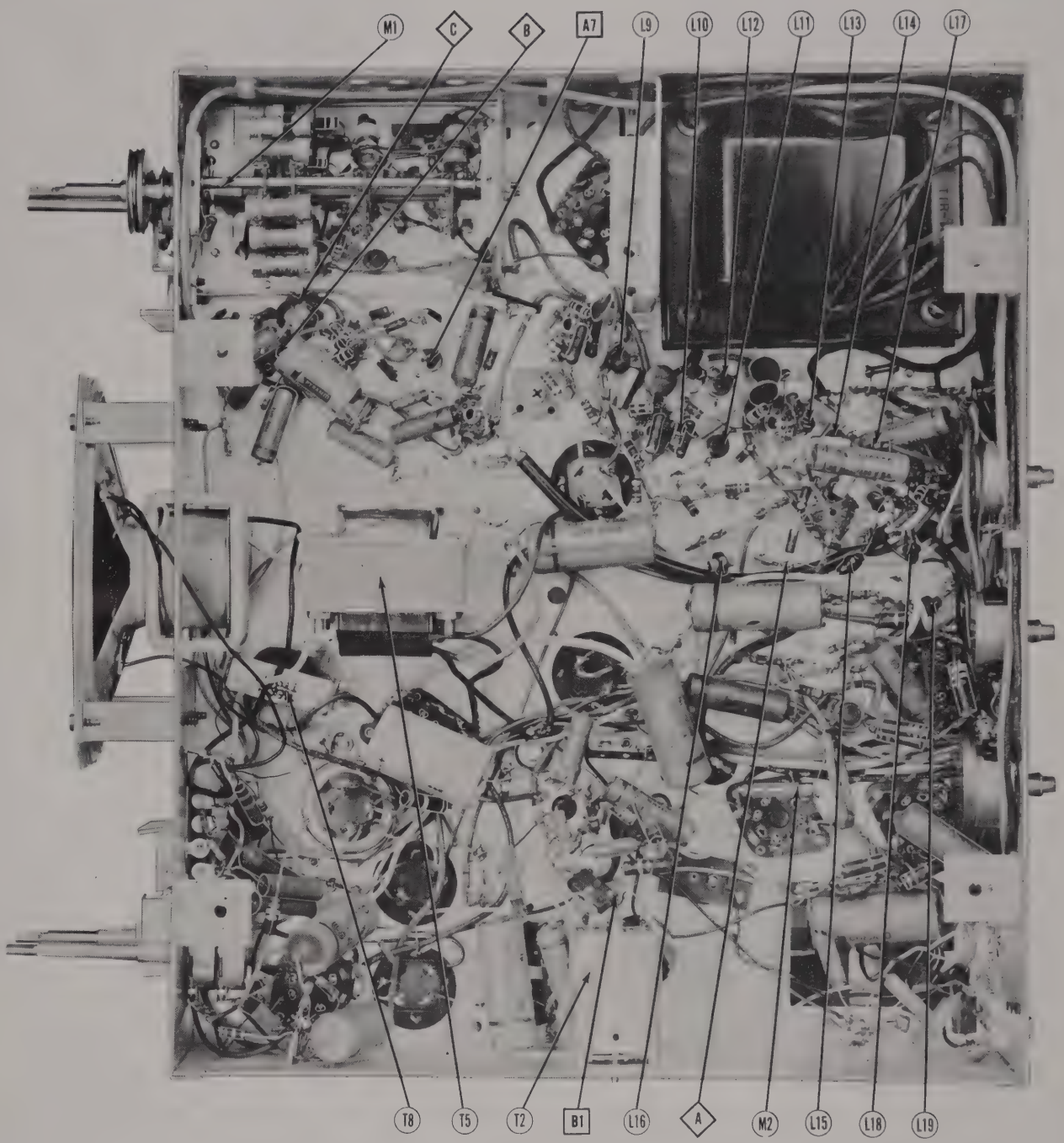
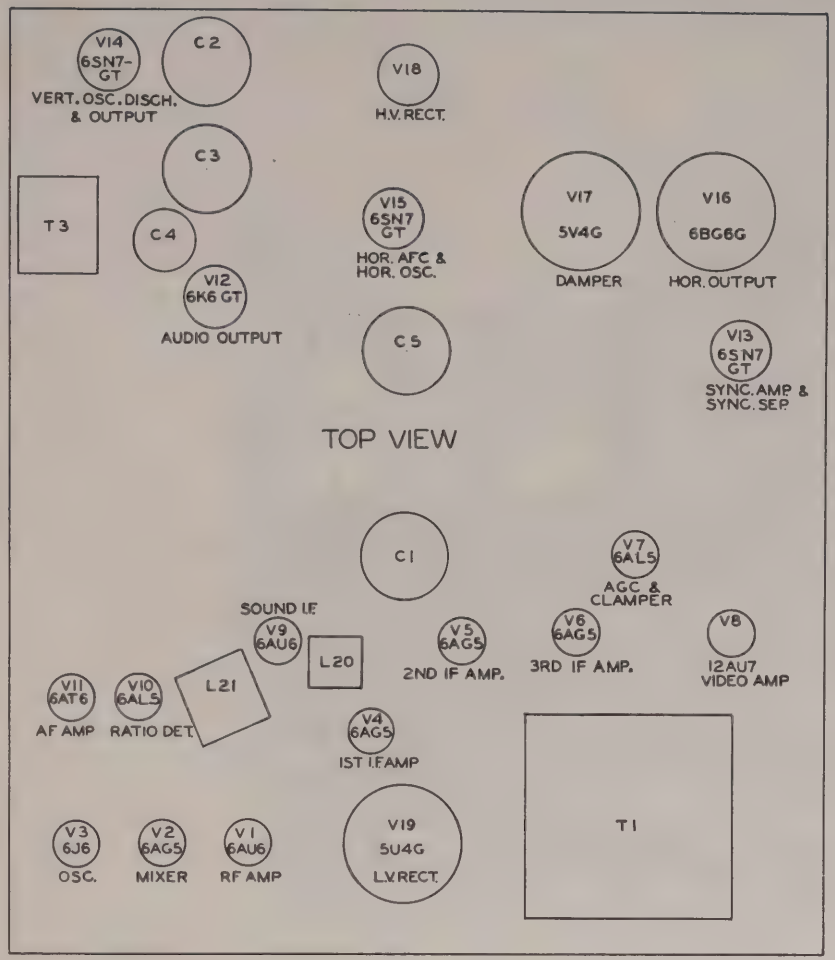
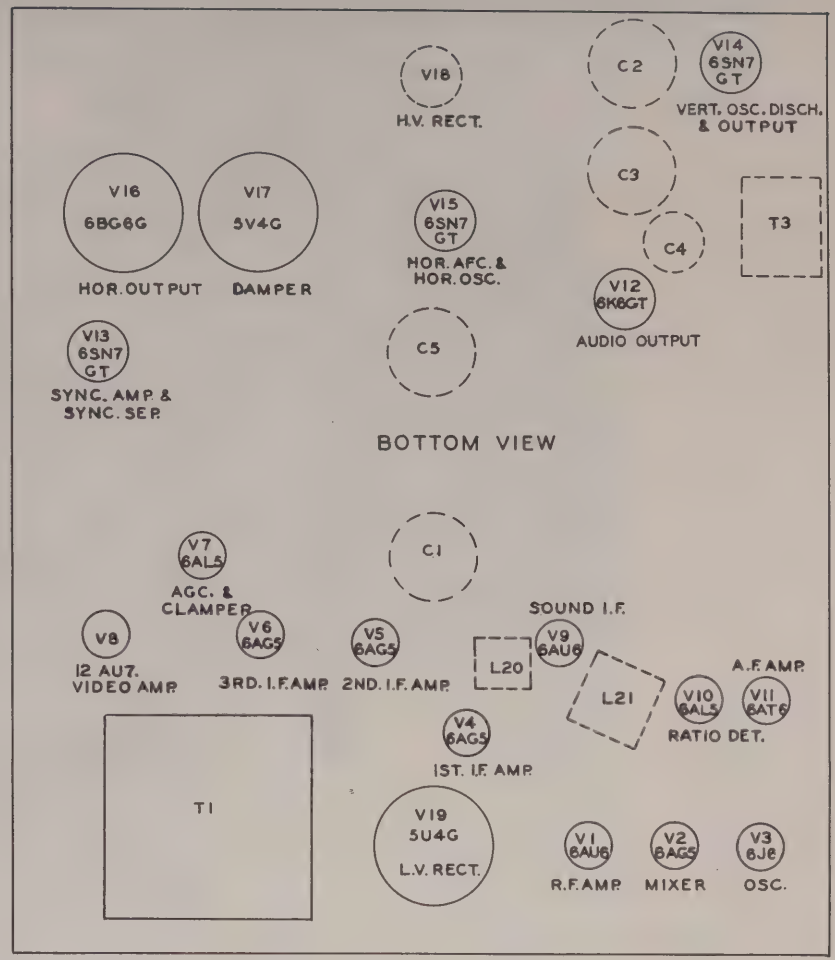


CHASSIS TOP VIEW

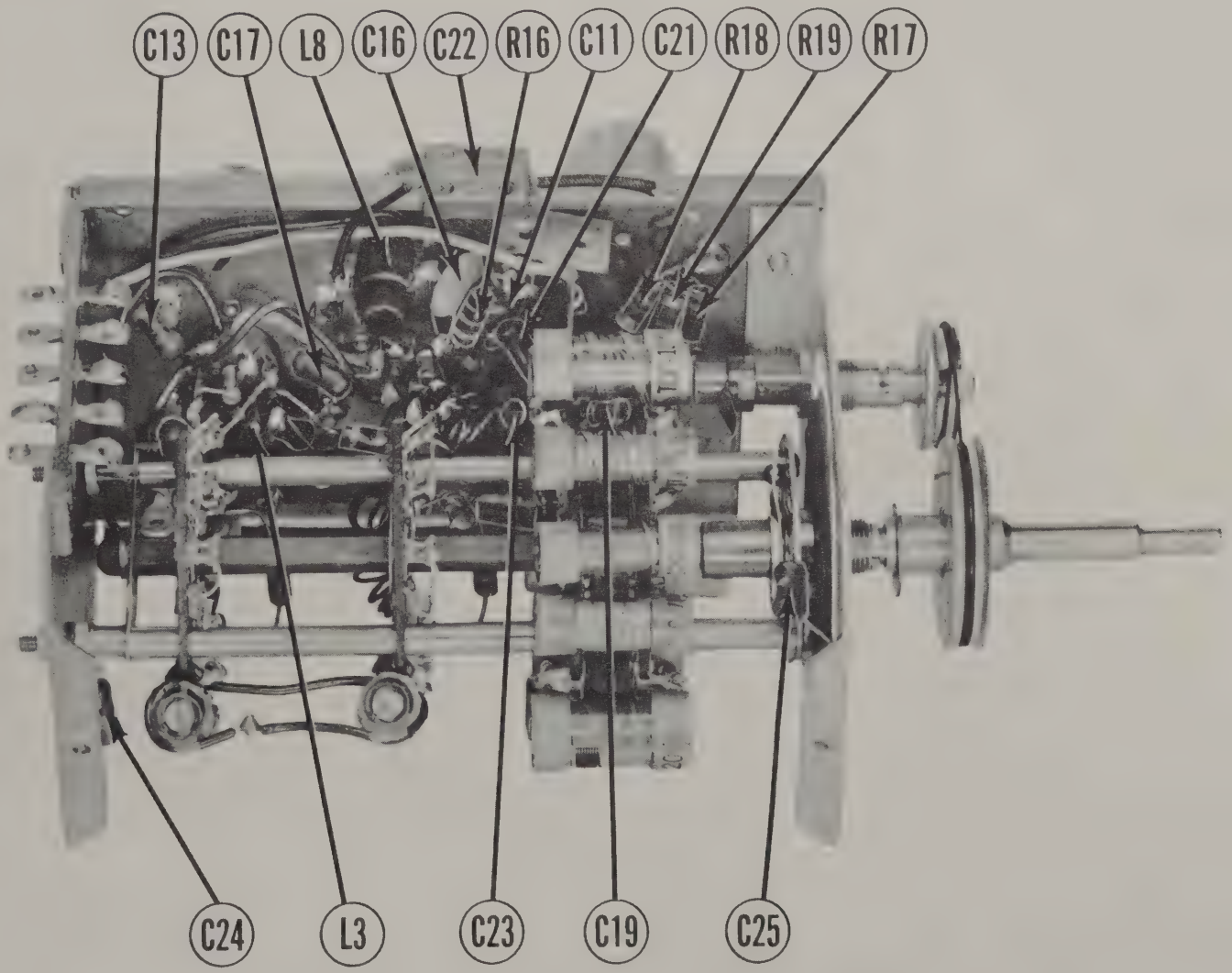


CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

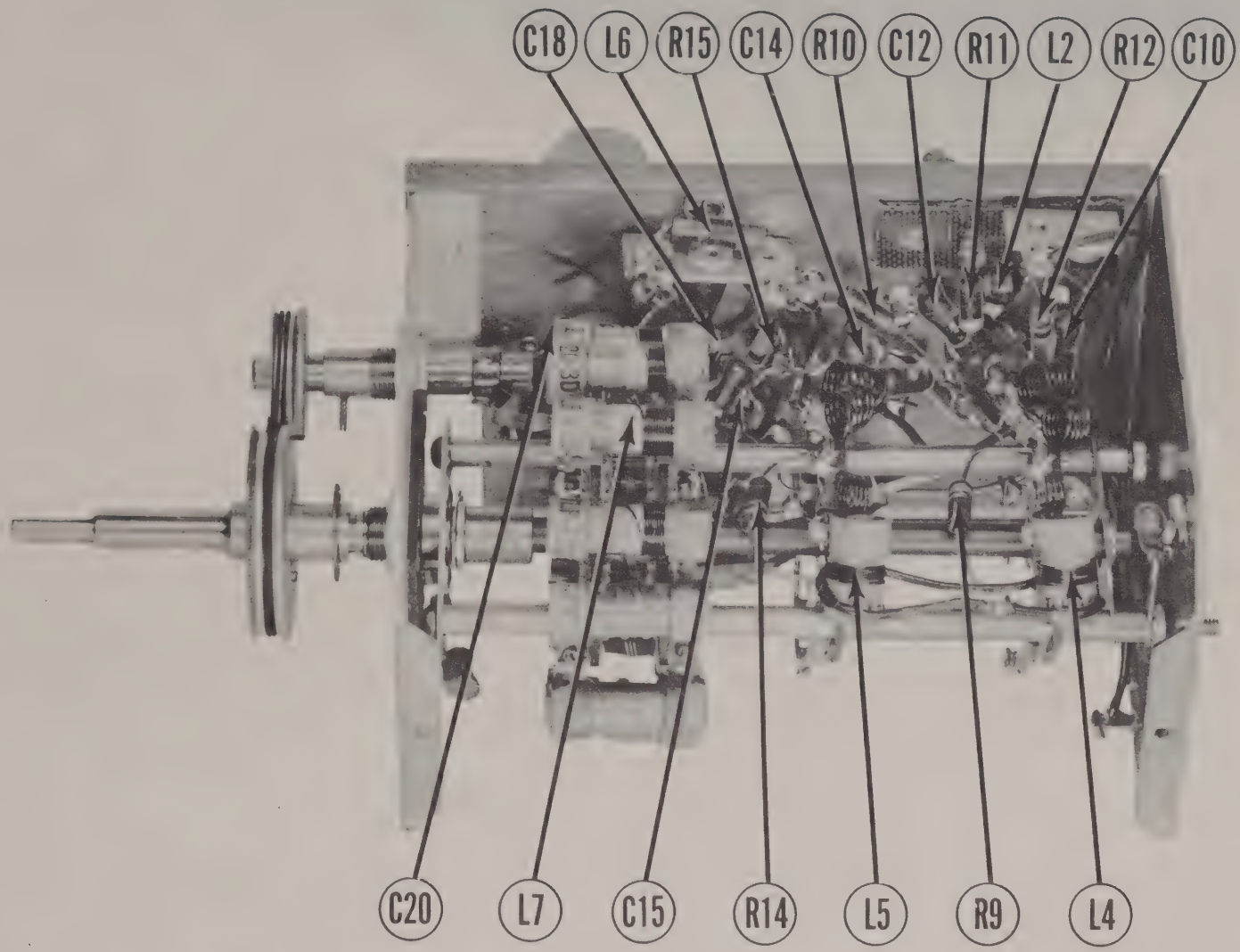




TUBE PLACEMENT CHART



RF TUNER-LEFT SIDE



RF TUNER-RIGHT SIDE

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
V 1	6AU6	-.2VDC	0V.	6.5VAC	0V.	125VDC	125VDC	.5VDC	-	-
V 2	6AG5	-1.8VDC	0V.	6.5VAC	0V.	122VDC	122VDC	0V.	-	-
V 3	6J6	112VDC	110VDC	6.5VAC	0V.	-4.2VDC§	-4.7VDC§	.4VDC	-	-
V 4	6AG5	-.5VDC	.3VDC	6.5VAC	0V.	120VDC	118VDC	.3VDC	-	-
V 5	6AG5	-.5VDC	0V.	6.5VAC	0V.	127VDC	127VDC	0V.	-	-
V 6	6AG5	0V.	1VDC	6.5VAC	0V.	118VDC	118VDC	1VDC	-	-
V 7	6AL5	.2VDC	0V.	0V.	6.5VAC	0V.	0V.	-.1VDC	-	-
V 8	12AU7	112VDC	-.7VDC	0V.	6.5VAC	6.5VAC	60VDC	-80VDC	-80VDC	PIN #9 0V.
V 9	6AU6	0V.	0V.	6.5VAC	0V.	118VDC	118VDC	.7VDC	-	-
V 10	6AL5	.1VDC	-.1VDC	6.5VAC	0V.	.1VDC	0V.	.1VDC	-	-
V 11	6AT6	-.3VDC	0V.	0V.	6.5VAC	0V.	0V.	65VDC	-	-
V 12	6K6GT	0V.	6.5VAC	195VDC	200VDC	-10VDC	-13.5VDC	0V.	0V.	-
V 13	6SN7GT	-.6VDC	125VDC	0V.	-.3VDC	225VDC	10VDC	6.5VAC	0V.	-
V 14	6SN7GT	-80VDC	-1.4VDC -38VDC	-84VDC	-65VDC	205VDC	-65VDC -70VDC	6.5VAC	0V.	-
V 15	6SN7GT	-68VDC	60VDC	-75VDC	-135VDC	65VDC	-84VDC	6.5VAC	0V.	-
V 16	6BG6G	0V.	6.5VAC	-75VDC	0V.	-80VDC	0V.	0V.	175VDC	†
V 17	5V4G	0V.	340VDC	340VDC	270VDC	0V.	270VDC	0V.	340VDC	-
V 18	1B3GT	†DO NOT MEASURE.								
V 19	5U4G	0V.	270VDC	0V.	370VAC	0V.	370VAC	0V.	270VDC	-

		PINS 1	2	3	4	5	6	7	8	9	10	11	12
V 20	10BP4	130VDC	60VDC	-	-	-	0V.	0V.	-	-	320VDC	40VDC	130VDC

†DO NOT MEASURE

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
V 1	6AU6	1.5 Meg.	0Ω	.2Ω	0Ω	2.3KΩ*	2.3KΩ*	100Ω	-	-
V 2	6AG5	1 Meg.	0Ω	.2Ω	0Ω	2.3KΩ*	2.3KΩ*	0Ω	-	-
V 3	6J6	1.3KΩ*	1.3KΩ*	.2Ω	0Ω	27KΩ	27KΩ	47Ω	-	-
V 4	6AG5	690KΩ	39Ω	.2Ω	0Ω	2.3KΩ*	2.3KΩ*	39Ω	-	-
V 5	6AG5	700KΩ	39Ω	.2Ω	0Ω	2.3KΩ*	2.3KΩ*	39Ω	-	-
V 6	6AG5	0Ω	100Ω	.2Ω	0Ω	2.3KΩ*	2.3KΩ*	100Ω	-	-
V 7	6AL5	12KΩ	3.9 Meg.	0Ω	.2Ω	0Ω	0Ω	120KΩ	-	-
V 8	12AU7	5KΩ*	1 Meg.	0Ω	.2Ω	.2Ω	5.5KΩ*	1 Meg.	800Ω	PIN #9 0Ω
V 9	6AU6	1.2Ω	0Ω	.2Ω	0Ω	2.3KΩ*	2.3KΩ*	80Ω	-	-
V 10	6AL5	15KΩ	15KΩ	.2Ω	02Ω	INF.	0Ω	INF.	-	-
V 11	6AT6	10 Meg.	0Ω	0Ω	.2Ω	0Ω	0Ω	330KΩ*	-	-
V 12	6K6GT	INF.	.2Ω	1.8KΩ*	1.2KΩ*	470KΩ	130Ω	0Ω	0Ω	-
V 13	6SN7GT	1 Meg.	17KΩ*	0Ω	3.9 Meg.	300Ω*	6.8KΩ	.2Ω	0Ω	-
V 14	6SN7GT	1 Meg.	2.8 Meg.* 1.4 Meg.*	750Ω	2.2 Meg.	1.8KΩ*	6KΩ 1.3KΩ	.2Ω	0Ω	-
V 15	6SN7GT	700KΩ	180KΩ	240KΩ	180KΩ	500KΩ	750Ω	.2Ω	0Ω	-
V 16	6BG6G	INF.	.2Ω	850Ω	INF.	1 Meg.	INF.	0Ω	4.7KΩ*	450KΩ
V 17	5V4G	INF.	450KΩ	450KΩ	60Ω*	INF.	60Ω*	INF.	450KΩ	-
V 18	1B3GT	INF.	INF.	INF.	INF.	INF.	INF.	INF.	INF.	450KΩ
V 19	5U4G	INF.	10KΩ	INF.	800Ω	INF.	800Ω	INF.	10KΩ	-

		PINS 1	2	3	4	5	6	7	8	9	10	11	12
V 20	10BP4	7.5KΩ	5KΩ*	-	-	-	INF.	INF.	-	-	450KΩ	65KΩ	7.5KΩ

*MEASURED FROM PIN 8 OF V19.

1 - DC Voltage measurements are at 20,000 ohms per volt: AC Voltage measured at 1000 ohms.

2 - Socket connections are shown as bottom views.

3 - Measured values are from socket pin to common negative unless otherwise stated.

4 - Line voltage maintained at 117 volts for voltage readings.

5 - Front panels controls set at maximum.

6 - Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Remove 6J6 Oscillator Tube (V3) while aligning IF system. Short antenna terminals and set contrast control to three quarters of its maximum rotation. An easy method of injecting the signal through the IF system is accomplished by placing a tube shield over the mixer tube but being careful not to ground the shield. Connect the signal generator high side to this tube shield and the low side to a nearly ground point.

VIDEO IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1	Tube Shield	See prealignment instructions	34.45MC (No mod.)	Any	DC probe to Point A. Common to chassis.	A1,A2	Adjust for maximum deflection.
2	"	"	37.0MC (No Mod.)	"	"	A3,A4	"
3	"	"	32.8MC (No Mod.)	"	"	A5	Adjust for minimum deflection. Readjust A1 at 34.45 MC. Turn off generator. VTVM should read no more than .2 volt. If higher than .2 volt, IF system is not properly aligned.

OVERALL RESPONSE CHECK USING FM SIGNAL GEN. & OSCILLOSCOPE

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4	Tube Shield (See prealignment)	High side to tube shield. Low side to chassis	35MC (10MC sweep)	32.8MC, 34.45MC, 37.0MC & 37.3MC	Any	Vert. Amp. to Point A. Low side to chassis	A1,A2, A3,A4, A5	Observe symmetry of pattern and slightly retouch A1,A2,A3,A4 & A5 to place markers as per Fig. 1, if necessary. (Dotted lines show acceptable variations.)

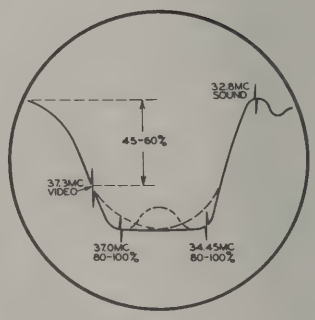


FIG. 1

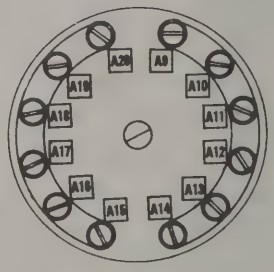
SOUND IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5	5000MMF	High side to Pin 7 (Grid) 12AU7 (V8). Low side to chassis	4.5MC (No mod.)	Any	DC probe to Point A. Low side to chassis.	A6,A7	Adjust for maximum output.
6	5000MMF	"	"	"	DC probe to Point A. Low side to chassis	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

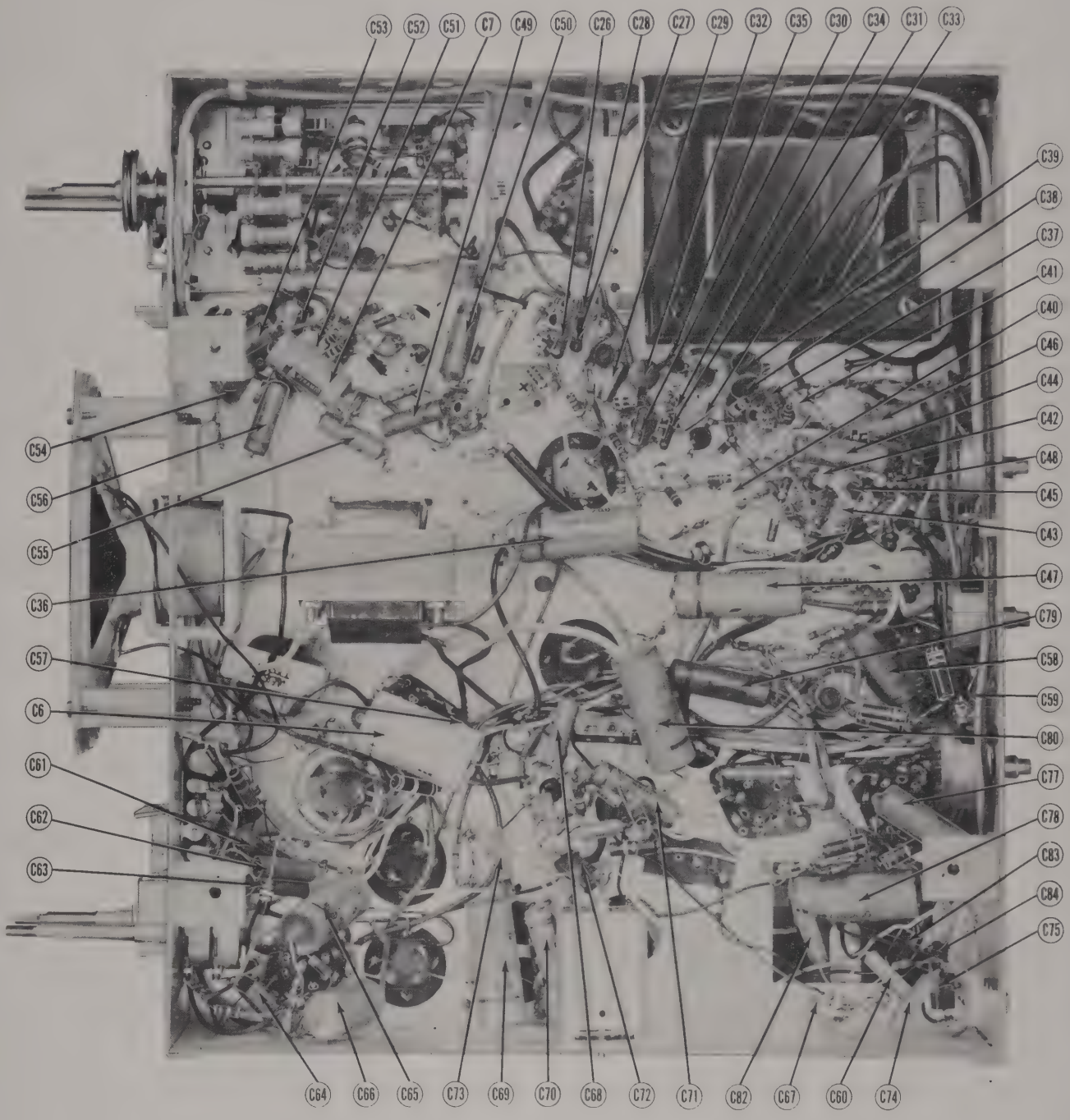
OSCILLATOR ALIGNMENT

The RF Amplifier and Mixer lines are aligned at the factory and are very stable and usually do not require adjustment in the field. Set fine tuning control at the mid-point of its range. It should be noted that Channel 2 Oscillator Coil is in parallel with all other oscillator coils from Channel 3 to 13 as they are switched into the circuit. It therefore is necessary to align Channel 2 first. If Channel 2 is aligned then all other Channels must be aligned.

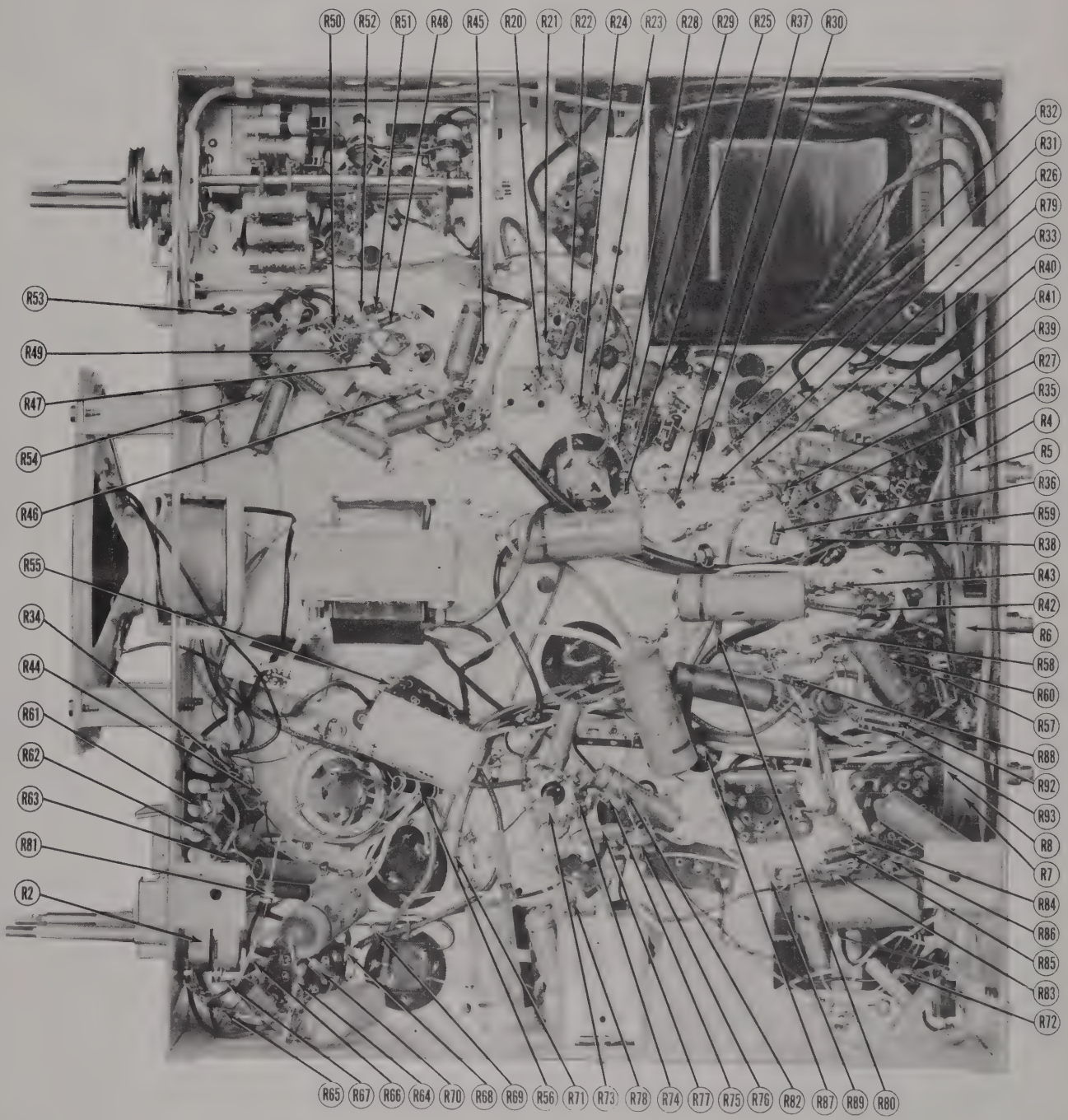
	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7	Direct	Across antenna terminals.	57MC (10MC sweep)	55.25MC (Video) 59.75MC (Sound)	2	Vert. Amp. to Point A. Low side to chassis	A9	Adjust until sound marker drops into "notch" in pattern as per Fig. 1. The video marker may vary 45% to 60% up the side of the slope.
8	Direct	"	63MC (10MC sweep)	61.25MC (Video) 65.75MC (Sound)	3	"	A10	"
9	Direct	"	69MC (10MC sweep)	67.25MC (Video) 71.75MC (Sound)	4	"	A11	"
10	Direct	"	79MC (10MC sweep)	77.25MC (Video) 81.75MC (Sound)	5	"	A12	"
11	Direct	"	85MC (10MC sweep)	83.25MC (Video) 87.75MC (Sound)	6	"	A13	"
12	Direct	"	177MC (10MC sweep)	175.25MC (Video) 179.75MC (Sound)	7	"	A14	"
13	Direct	"	183MC (10MC sweep)	181.25MC (Video) 185.75MC (Sound)	8	"	A15	"
14	Direct	"	189MC (10MC sweep)	187.25MC (Video) 191.75MC (Sound)	9	"	A16	"
15	Direct	"	195MC (10MC sweep)	193.25MC (Video) 197.75MC (Sound)	10	"	A17	"
16	Direct	"	201MC (10MC sweep)	199.25MC (Video) 203.75MC (Sound)	11	"	A18	"
17	Direct	"	207MC (10MC sweep)	205.25MC (Video) 209.75MC (Sound)	12	"	A19	"
18	Direct	"	213MC (10MC sweep)	211.25MC (Video) 215.75MC (Sound)	13	"	A20	"



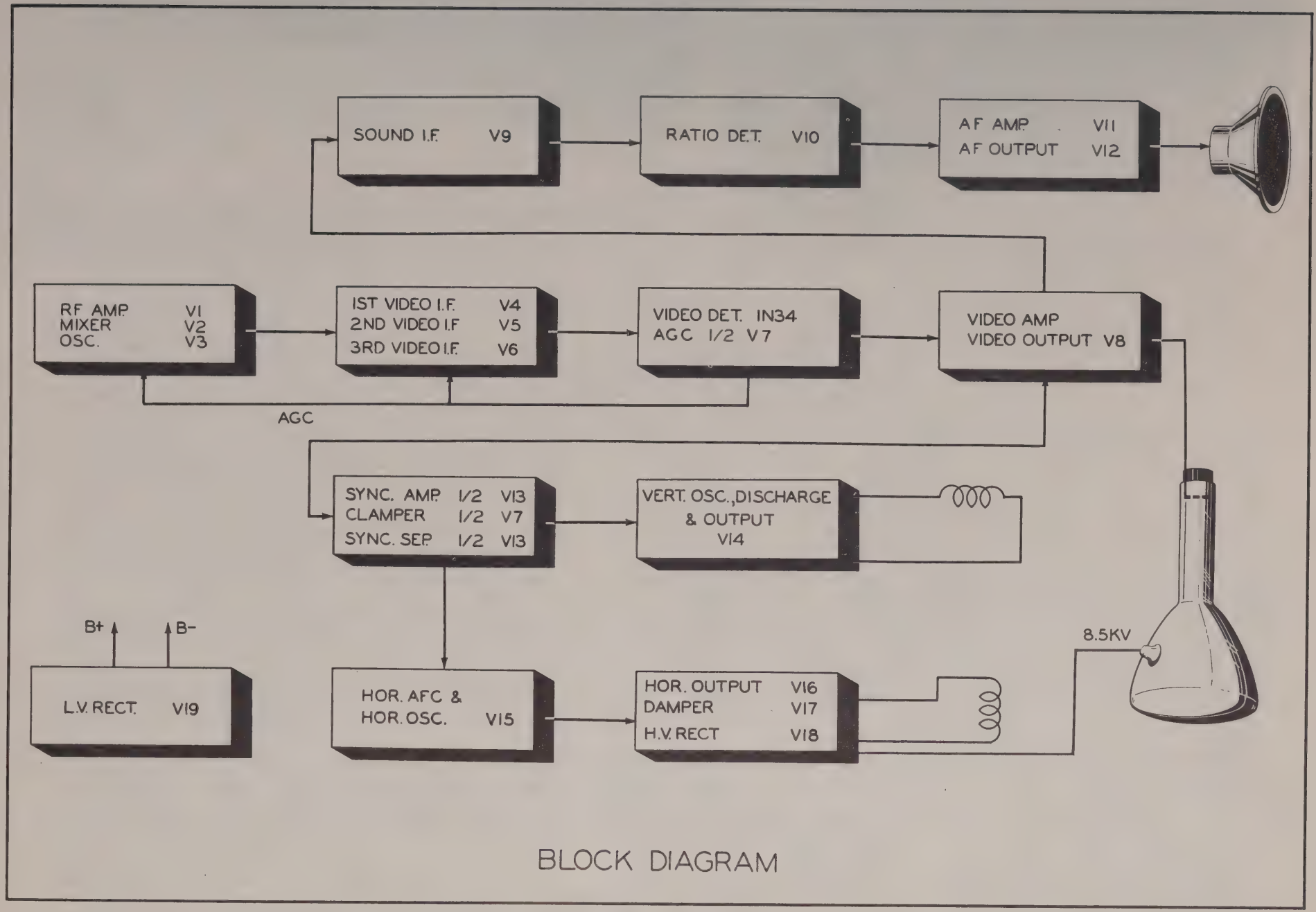
OSC. ALIGNMENT POINTS



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



BLOCK DIAGRAM

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6AU6	6AU6	7BK	
V2	Mixer	6AG5	6AG5	7BD	
V3	Oscillator	6J6	6J6	7BF	
V4	1st IF Amp.	6AG5	6AG5	7BD	
V5	2nd IF Amp.	6AG5	6AG5	7BD	
V6	3rd IF Amp.	6AG5	6AG5	7BD	
V7	AGC & Clamper	6AL5	6AL5	6BT	
V8	Video Amp. & Video Output	12AU7	12AU7	9A	
V9	Sound IF Amp.	6AU6	6AU6	7BK	
V10	Ratio Detector	6AL5	6AL5	6BT	
V11	AF Amp.	6AT6	6AT6	7BT	
V12	Audio Output	6K6GT	6K6GT	7S	
V13	Sync. Amp. Sync Sep.	6SN7GT	6SN7GT	8BD	
V14	Vert. Osc. & Discharge, Vert Output	6SN7GT	6SN7GT	8BD	
V15	Hor. Osc.	6SN7GT	6SN7GT	8BD	
V16	Hor. Output	6BQ6G	6BQ6G	5BT	
V17	Damper	5V4G	5V4G	5L	
V18	H.V. Rectifier	1B3GT	1B3GT	3C	
V19	L.V. "	5U4G	5U4G	5T	
V20	Picture Tube	10BP4	10BP4	-	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES INSTALLATION NOTES
C1A	40	450	TCE-116-D					◓ Filter
B	10	350						▲ Vert. Output Decoup.
C2A	40	450	TCE-117-D					◓ Filter
B	40	150						■ Bias Filter
C	130	50						▲ Vert. Cath. Bypass
C3A	80	450	TCE-113-D					◓ Filter AND
B	10	450						▲ Decoupling
C4A	10	450	TCE-115-D					◓ "
B	30	400						■ Filter
C	33	300						▲ "
C5A	1,000	6	TCE-114-D					▲ Vert. Cent. Bypass
B	250	10						◓ Hor. Cent. Bypass
C6	24	300	TCE-112-D	PRS350/24	BR2045	M-20-350	UT-203	S. Output Decoupling
C7	4	25	TCE-104-D	PRS150/4	BR415	M-4-450	UT-41	Stabilizing Cap.
C8	360	500	TCC-501-10					Ant. Coupling-Note1
C9	360	500	TCC-501-10					Cer. " "
C10	360	500	TCC-501-10					RF Coupling-Note 2 " "
C11	360	500	TCC-501-10					AVC Filter " "
C12	360	500	TCC-501-10					RF Screen Byp. " "
C13	330	500	TCC-501-10					RF Fil. Byp. " "
C14	.82		TCC-0.82-SP					RF Coupling "
C15	22		TCC-22-12					" " "
C16	5000	600	TCC-502-SP					Mixer Decoup. "
C17	300	500	TCC-501-10					Mixer Fil. Byp. " Note 2 " "
C18	1.5		TCC-1.0-11					Osc. Coupling "
C19	4.7		TCC-407-11					Osc. Feedback "
C20	4.7		TCC-407-11					" " "
C21	300	500	TCC-501-10					Osc. Fil. Byp. Note 3 "
C22	270	500	TCM-271-13	1468-00025	SWST25	MO.5-325	1FM-325	IF Coupling "
C23	360	500	TCC-501-10					Decoupling-Note 2 "
C24	360	500	TCC-501-10					Tuner Switch Iso. " Note 3 " "
C25	360	500	TCC-501-10					" " "
C26	1500	600	TCC-152-10	1467-0015	1W5D15	MW.5-215	1FM-215	AGC Filter "
C27	1500	600	TCC-152-10	1467-0015	1W5D15	MW.5-215	1FM-215	1st IF Decoupling "
C28	5000	600	TCC-502-SP	1467-005	1D5D5	MW.5-25	1FM-25	1st IF Fil. Byp. "
C29	270	500	TCM-271-13	1468-00025	SWST25	MO.5-325	1FM-325	IF Coupling "
C30	1500		TCC-152-10	1467-0015	1W5D15	MW.5-215	1FM-215	AGC Filter "
C31	1500	600	TCC-152-10	1467-0015	1W5D15	MW.5-215	1FM-215	2nd IF Decoupling "
C32	5000	600	TCC-502-SP	1467-005	1D5D5	MW.5-25	1FM-25	2nd IF Fil. Byp. "
C33	270	500	TCM-271-13	1468-00025	SWST25	MO.5-325	1FM-325	IF Coupling "
C34	1.5		TCC-1.5-11					" " "
C35	30	500	TCC-030-11					Fixed Trimmer
C36	.25	400	TCP-254-4	P488-25	GT4P25	ST-4-25	TC-2	AGC Filter
C37	1500	600	TCC-152-10	1467-0015	1W5D15	MW.5-215	1FM-215	3rd IF Decoupling "
C38	5000	600	TCC-502-SP	1467-005	1D5D5	MW.5-25	1FM-25	3rd IF Cath. Byp. "
C39	5000	600	TCC-502-SP	1467-005	1D5D5	MW.5-25	1FM-25	3rd IF Fil. Byp. "
C40	5000	600	TCC-502-SP	1467-005	1D5D5	MW.5-25	1FM-25	Decoupling "
C41	270	500	TCM-271-13	1468-00025	SWST25	MO.5-325	1FM-325	IF Coupling "
C42	470	600	TCC-471-10	1468-0005	SW5T5	MO.5-35	1FM-35	IF Coupling "
C43	5000	600	TCC-502-SP	1467-005	1D5D5	MW.5-25	1FM-25	Bias Filter "
C44	.05	400	TCP-503-4	P488-05	GT4S5	ST-4-05	TM-15	Video Coupling "
C45	5		TCC-050-11	1469-0000005	SR5V5	MO8.5-55	MS-55	Fixed Trimmer "
C46	.05	400	TCP-503-4	P488-05	GT4S5	ST-4-05	TM-15	Video Coupling
C47	.25	400	TCP-254-4	P488-25	GT4P25	ST-4-25	TC-2	Picture Cath. Bypass
C48	2.2		TCC-2.2-11					Sound Coupling "
C49	.01	400	TCP-103-4	P488-01	GT4S1	ST-4-01	TM-11	Sound IF Decoupling
C50	.02	400	TCP-203-4	P488-02	GT4S2	ST-4-02	TM-12	S. Cath. Bypass
C51A	2000		TCC-2-1	1467-002	1W5D2	MW.5-22	1FM-22	Diode Load Cap. " Note 6 " "
B	2000			1467-002	1W5D2	MW.5-22	1FM-22	" " "
C52	1500		TCC-152-10	1467-0015	1W5D15	MW.5-15	1FM-215	De-emphasis "
C53	.01	400	TCP-103-4	P488-01	GT4S1	ST-4-01	TM-11	Audio Coupling-Note 4
C54	.002	600	TCP-202-10	P688-002	GT6D2	ST-6-002	TM-22	" " Note 5
C55	.002	600	TCP-202-10	P688-002	GT6D2	ST-6-002	TM-22	AF Plate bypass
C56	.01	400	TCP-103-4	P488-01	GT4S1	ST-4-01	TM-11	Audio Coupling
C57	.005	600	TCP-502-10	P688-005	GT6D5	ST-6-005	TM-25	Output Plate Bypass
C58	.05	400	TCP-503-4	P488-05	GT4S5	ST-4-05	TM-15	Video Coupling
C59	100	500	TCM-101-7	1468-0001	SW5T1	MO.5-31	1FM-31	Sync. Coupling
C60	390	500	TCM-391-14	1468-0004	SW5T4	MO.5-34	1FM-34	Sync. Amp. Cath. byp.
C61	.002	600	TCP-103-4	P688-002	GT6D2	ST-6-002	TM-22	Integrator Network
C62	.005	400	TCP-502-4	P488-005	GT6D5	ST-4-005	TM-25	" " "
C63	.005	400	TCP-502-4	P488-005	GT6D5	ST-4-005	TM-25	" "
C64	4700	500	TCM-472-9	1464-005	1D5D5	MW.5-25	1FM-25	Vert. Osc. Grid
C65	.25	400	TCP-254-4	P488-25	GT4P25	ST-4-25	TC-2	Vert. Coupling
C66	.1	100	TCP-104-13	1084-1	TVC10P1	STM-10-1	PX-11	Vert. Discharge
C67	120	500	TCM-121-8					Sync. Coupling
C68	.002	600	TCP-202-10	P688-002	GT6D2	ST-6-002	TM-22	" "
C69	.25	400	TCP-254-4	P488-25	GT4P25	ST-4-25	TC-2	AFC Filter
C70	.02	400	TCP-203-4	P488-02	GT4S2	ST-4-02	TM-12	" "
C71	.05	400	TCP-503-4	P488-05	GT4S5	ST-4-05	TM-15	AFC Plate Bypass
C72	180	500	TCM-181-22					Hor. Osc. Grid ±2 %
C73	2200	500	TCM-222-15					Hor. Osc. Decoup. ±5%
C74	390	500	TCM-391-14	1469-0004	SR5T4	MO8.5-34	MS-34	Hor. Coupling
C75	120	500	TCM-121-8					Fixed Trimmer ±10%
C76	47	800	TCM-047-25					" " -Note 3
C77	.05	600	TCP-503-10	P688-05	GT6S5	ST-6-05	TM-15	Hor. Output Screen Byp.
C78	.25	400	TCP-254-4	P488-25	GT4P25	ST-4-25	TC-2	Hor. Output. Cath. Byp.
C79	.035	600	TCP-353-10					Damper Filter
C80	.1	1000	TCP-104-13	1084-1	TVC10P1	STM-10-1	PX-11	" "
C81	500	10000	TCM-501-SP					H.V. Filter
C82	5	150	TCM-050-20					AFC Feedback
C83	.01	400	TCPM-103-4	P488-01	GT4S1	MPH-6-01	TM-11	Line Filter
C84	.01	400	TCPM-103-4	P488-01	GT4S1	MPH-6-01	TM-11	" "

Note 1-Some models use 5000 MMF in this application.
Note 2-Some models use 500 MMF in this application.
Note 3-Not used in all models.
Note 4-Some models use .002 MFD in this application.
Note 5-Some models use .01 MFD in this application.
Note 6-When either Item C51A or C51B are replaced, replace both with capacitors of equal value.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R1A	10KΩ	½	TVC-500-D			Contrast Control Dual Concentric
B	500KΩ	½				Brightness Control " "
R2A	1 Meg.	½	TVC-501-D			Vert. Hold Control "
B	50KΩ	½				Horizontal Hold Control "
R3A	1 Meg.	½	TVC-502-D	M-63-Z	D13-137	Volume Control
B	Shaft		Not Req.	Not Req.	A	Attach to R3A per instructions
C	Switch		"	SW-A	41	" " " "
R4A	5000Ω	½	TVC-503-D	M-19-S	D11-114	Vertical Linearity Control
B	Shaft		Not Req.	Not Req.	A	Attach to R4A per instructions
R5A	2.5 Meg.	½	TVC-504-D			Height Control
B	Shaft		Not Req.			Attach to R5A per instructions
R6	20Ω	2	TVC-505-D		W20A10	Vertical Centering tapped @ 10Ω
R7	20Ω	2	TVC-507-D	43-20	W-20	Horizontal Centering
R8	2250Ω	4	TVC-506-D	58-3000	W-3000	Focus

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES (ALL RESISTORS ARE 10% TOL. UNLESS OTHERWISE SPECIFIED)	
R9	470Ω	½	TRC472-3		Yl.-Vl.-Red	RF Coil Shunt ±5%
R10	100Ω	½	TRC102-1	BTS-1000	Br.-Blk.-Red	RF Screen ±20%
R11	10Ω	½	TRC101-3		Br.-Blk.-Br.	RF Cathode ±5%
R12	1 Meg.	½	TRC105-3	BTS-1 Meg. ±5%	Br.-Blk.-Grn.	RF Grid ±5%
R13	1000Ω	½	TRC102-3	BTS-1000 ±5%	Br.-Blk.-Red	Antenna Coil Shunt* ±5%
R14	470Ω	½	TRC472-3		Yl.-Vl.-Red	Mixer Coil Shunt ±5%
R15	1 Meg.	½	TRC105-3	BTS-1 Meg. ±5%	Br.-Blk.-Grn.	Mixer Grid ±5%
R16	1000Ω	½	TRC102-1	BTS-1000	Br.-Blk.-Red	Mixer Decoupling ±20%
R17	47Ω	½	TRC470-1		Yl.-Vl.-Blk.	Oscillator Cathode ±20%
R18	27KΩ	½	TRC2271-1	BTS-27K	Red-Vl.-Or.	Oscillator Grid ±20%
R19	27KΩ	½	TRC273-1	BTS-27K	Red-Vl.-Or.	" " ±20%
R20	330Ω	½	TRC331-2		Or.-Or.-Br.	AGC Network
R21	5600Ω	½	TRC562-3		Grn.-Blue-Red	IF Grid ±5%
R22	39Ω	½	TRC390-2		Or.-White-Blk.	IF Cathode
R23	1000Ω	½	TRC102-1	BTS-1000	Br.-Blk.-Red	IF Decoupling ±20%
R24	330Ω	½	TRC331-2		Or.-Or.-Br.	AGC Network
R25	330Ω	½	TRC331-2		Or.-Or.-Br.	" "
R26	560KΩ	½	TRC564-2	BTS-560K	Grn.-Blue-Yl.	" "
R27	120KΩ	½	TRC124-2	BTS-120K	Br.-Red-Yl.	Diode Load
R28	15KΩ	½	TRC153-3		Br.-Grn.-Or.	2nd IF Grid ±5%
R29	39Ω	½	TRC390-2		Or.-White-Blk.	2nd IF Cathode
R30	1000Ω	½	TRC102-1	BTS-1000	Br.-Blk.-Red	2nd IF Decoupling ±20%
R31	10KΩ	½	TRC103-2		Br.-Blk.-Or.	3rd IF Grid ±5%
R32	10Ω	½	TRC101-2		Br.-Blk.-Br.	3rd IF Cathode
R33	1000Ω	½	TRC102-1	BTS-1000	Br.-Blk.-Red	3rd IF Decoupling ±20%
R34	120KΩ	1	TRC124-5	BTA-120K	Br.-Red-Yl.	Voltage Divider
R35	1500Ω	½	TRC152-1	BTS-1500	Br.-Grn.-Red	Bias Filter ±20%
R36	5600Ω	½	TRC562-3	BTS-5600 ±5%	Grn.-Blue-Red	Video Detector Load ±5%
R37	330Ω	½	TRC332-3	BTS-3300 ±5%	Or.-Or.-Red	" " ±5%
R38	1 Meg.	½	TRC105-3	BTS-1 Meg. ±5%	Br.-Blk.-Grn.	1st Video Grid ±5%
R39	3300Ω	½	TRC332-2	BTS-3300	Or.-Or.-Red	Video Amplifier Plate Load ±20%
R40	1 Meg.	½	TRC106-3	BTS-1 Meg. ±5%	Br.-Blk.-Grn.	Video Output Grid ±5%
R41	47Ω	½	TRC470-1		Yl.-Vl.-Blk.	Video Output Cathode ±20%
R42	3300Ω	1	TRC332-5	BTA-3300	Or.-Or.-Red	Video Output Plate
R43	1000Ω	½	TRC102-1	BTS-1000	Br.-Blk.-Red	Video Output Plate ±20%
R44	100KΩ	½	TRC104-2	BTS-100K	Br.-Blk.-Yl.	Voltage Divider
R45	82Ω	½	TRC820-2		Gray-Red-Blk.	Sound IF Cathode
R46	1200Ω	½	TRC122-1	BTS-1200	Br.-Red-Red	Sound IF Decoupling ±20%
R47	220Ω	½	TRC221-1		Red-Red-Br.	Balancing ±20%
R48	220Ω	½	TRC221-1		Red-Red-Br.	" ±20%
R49	15KΩ	½	TRC153-3	BTS-15K ±5%	Br.-Grn.-Or.	Ratio Detector Diode Load ±5%
R50	15KΩ	½	TRC153-3	BTS-15K ±5%	Br.-Grn.-Or.	Ratio Detector Diode Load ±5%
R51	5.1Ω	3	TRC051A-2		Grn.-Br.-Gold	Filament String
R52	47KΩ	½	TRC473-1	BTS-47K	Yl.-Vl.-Or.	De-emphasis ±20%
R53	10 Meg.	½	TRC106-1	BTS-10 Meg.	Br.-Blk.-Blue	AF Grid ±20%
R54	330KΩ	½	TRC334-1	BTS-330K	Or.-Or.-Yl.	AF Plate ±20%
R55	470KΩ	1	TRC474-1	BTA-470K	Yl.-Vl.-Yl.	Output Grid ±20%
R56	1000Ω	1	TRC102-4	BTA-1000	Br.-Blk.-Red	Filter ±20%
R57	15KΩ	1	TRC153-4	BTA-15K	Br -Grn.-Or.	Sync. Amplifier Plate ±20%
R58	1 Meg.	½	TRC105-1	BTS-1 Meg.	Br.-Blk.-Grn.	Sync. Amplifier Grid ±20%
R59	3.9 Meg.	½	TRC395-2	BTS-3.9 Meg.	Or.-White-Grn.	Sync. Seperator Grid
R60	6800Ω	½	TRC682-1	BTS-6800	Blue-Gray-Red	Sync. Seperator Cathode ±20%
R61	22KΩ	½	TRC223-1	BTS-22K	Red-Red-Or.	Integratror Network ±20%
R62	8200Ω	½	TRC822-2	BTS-8200	Gray-Red-Red	"
R63	8200Ω	½	TRC822-2	BTS-8200	Gray-Red-Red	" "
R64	1.5 Meg.	½	TRC155-2	BTS-1.5 Meg.	Br.-Grn.-Grn.	Vert. Osc. Plate
R65	6.8 Meg.	½	TRC685-2	BTS-6.8 Meg.	Blue-Gray-Grn.	Voltage Divider

RESISTORS (CONT.)

R66	100KΩ	½	TRC104-2	BTS-100K	Br.-Blk.-Yl.	" " "
R67	1 Meg.	½	TRC105-3	BTS-1 Meg. ±5%	Br.-Blk.-Grn.	Vertical Oscillator Grid ±5%
R68	560Ω	½	TRC561-2	BTS-560	Grn.-Blue-Br.	Vertical Output Cathode
R69	2.2 Meg.	½	TRC225-1	BTS-2.2 Meg.	Red-Red-Grn.	Vertical Output Grid ±20%
R70	33000Ω	½	TRC333-2	BTS-2300	Or.-Or.-Red	Peaking ±20%
R71	1000Ω	½	TRC102-1	BTS-1000	Br.-Blk.-Red	Filter ±20%
R72	150KΩ	½	TRC154-2	BTS-150K	Br.-Grn.-Yl.	AFC Feedback
R73	3.3 Meg.	1	TRC335-6	BTS-3.3 Meg.	" " "	"
				±5%	Or.-Or.-Grn.	Voltage Divider ±5%
R74	560KΩ	½	TRC564-3	BTS-560K ±5%	Grn.-Blue-Yl.	Horizontal AFC Grid ±5%
R75	180KΩ	½	TRC184-2	BTS-180K	Br.-Gray-Yl.	Horizontal AFC Cathode
R76	100KΩ	1	TRC104-6	BTA-100K ±5%	Br.-Blk.-Yl.	voltage Divider Network ±5%
R77	100KΩ	½	TRC104-SP		" " "	Horizontal Oscillator Grid ±1%
R78	10KΩ	½	TRC103-2	BTS-10K	Br.-Blk.-Or.	Horizontal Oscillator Coil Shunt ±20%
R79	30KΩ	½	TRC303-12		" " "	Voltage Divider Network
R80	120KΩ	½	TRC124-2	BTS-120K	Br.-Red-Yl.	" " "
R81	270KΩ	½	TRC274-2	BTS-270K	Red-Vl.-Yl.	" " "
R82	120KΩ	1	TRC124-5	BTA-120K	Br.-Red-Yl.	Horizontal Oscillator Plate
R83	1 Meg.	½	TRC105-3	BTS-1 Meg. ±5%	Br.-Blk.-Grn.	Horizontal Output Grid ±5%
R84	47Ω	½	TRC470-1		Yl.-Vl.-Blk.	Parasitic Suppressor ±20%
R85	82Ω	1	TRC820-5		Gray-Red-Blk.	Horizontal Output Cathode
R86	4700Ω	1	TRC472-5	BTA-4700	Yl.-Vl.-Red	Horizontal Output Screen
R87	10KΩ	½	TRC103-2	BTS-10K	Br.-Blk.-Or.	Decoupling
R88	56KΩ	½	TRC563-2	BTS-56K	Grn.-Blue-Or.	Voltage Divider
R89	560KΩ	½	TRC564-2	BTS-560K	Grn.-Blue-Yl.	AFC Feedback
R90	32Ω	½			Or.-Blk.-Gold	Filament String ±5%
R91	1 Meg.	1	TRC105-4	BTA-1 Meg.	Br.-Blk.-Grn.	H.V. Filter ±20%
R92	680Ω	1	TRC681-4	BTA-680	Blue-Gray-Br.	Series Focus Control ±20%
R93	680Ω	1	TRC681-4	BTA-680	Blue-Gray-Br.	" " " ±20%
R94A	11250	20	TRP-1			Voltage Divider
B	610Ω	20				" "
R95	39Ω	1	TRC390-5	BW-1-39	Or.-White-Blk.	" "
R96A	8200Ω	5				" "
B	35Ω	8	TRP-2	AB-35		" "
C	100Ω	2		BW-2-100		" "

*Part of L2.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDARSON PART No.	REPLACEMENT DATA: MERIT PART No.
T1	117V AC @ 1.88A	740V AC CT @ 230A DC	5V AC @ 3A	5V AC @ 2A	TTR105			P-3059
		SEC. 4: 6.4V AC @ 6.5A	SEC. 5: 6.4V AC @ .6A					

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDARSON PART No.	REPLACEMENT DATA: MERIT PART No.	NOTES
T2	150Ω tap @ 41Ω		TTR157				Hor. Osc. Trans.
T3	131Ω	165Ω	TTR152	A-8111	TV24A88	A-3000	Vert. Block. Osc.
T4	420Ω tap @ 180Ω	SEC. 1: 19.6Ω tap @ .6Ω	TTR154				Hor. Output Trans.
		SEC. 2: 0Ω					
T5	590Ω	7Ω	TTR153	A-8115	TV24S86	A-3035	Vert. Output Trans.
T6A	14Ω		TTR159-D	DY-1			Hor. Deflec. Yoke
B	63Ω						Vert. Deflec. Yoke
T7	245Ω		TLF507	FC-10			Focus Coil

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
T8	7100Ω	3.4Ω	360Ω	.3Ω	TTR156	A-3878	T22S47	A-2931	

SPEAKER

ITEM No.	RATING: FIELD RES.	RATING: V. C. IMP.	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	NOTES
SP1A	51Ω	3.4Ω				
SP1B	PM					Alternate Speaker
	CONE DIA.	V. C. DIA.				
SP2A	4"x6"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 MA)	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDARSON PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
L1				TTR106-D				Not used in all models.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: PART No.	REPLACEMENT DATA: MEISSNER PART No.	NOTES
L2	Ant. Input Coil	.2Ω CT		TLF-139-D		
L3	RF Strap Inductor	0Ω		TLF-138-D		
L4	RF End Ind.	0Ω		TLF-143-D		
L5	" " "	0Ω		TLF-143-D		
L6	RF Plate Ch.	0Ω		TLF-140-D		

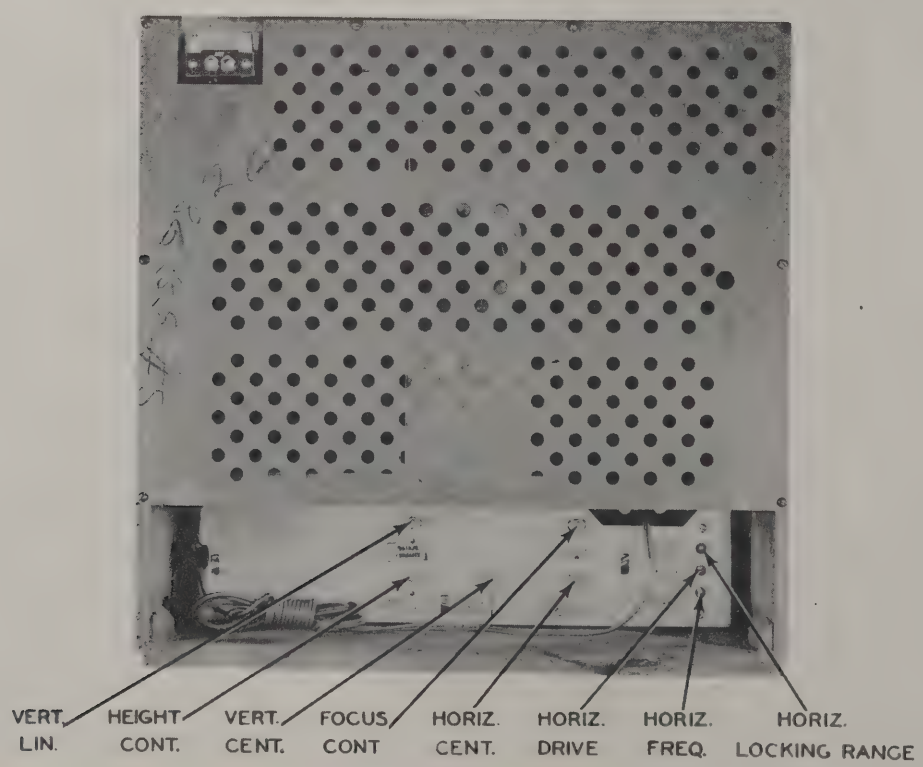
PARTS LIST AND DESCRIPTIONS (Continued)

COILS (CONT.)

L7A	Osc. Coils	0Ω		TLF-120-1D		Channel #2
B	" "	0Ω		TLF-120-2D		" #3
C	" "	0Ω		TLF-120-3D		" #4
D	" "	0Ω		TLF-120-4D		" #5
E	" "	0Ω		TLF-120-5D		" #6
F	" "	0Ω		TLF-120-6D		" #7
G	" "	0Ω		TLF-120-7D		" #8
H	" "	0Ω		TLF-120-8D		" #9
I	" "	0Ω		TLF-120-9D		" #10
J	" "	0Ω		TLF-120-10D		" #11
K	" "	0Ω		TLF-120-10D		" #12
L	" "	0Ω		TLF-120-10D		" #13
L8	IF Coil	.1Ω		TLF-147-D		
L9	1st VideoIF	.1Ω		TLF-147-D		
L10	IF Plate Chk.	2Ω		TLF-146-D		
L11	2nd Video IF	.1Ω		TLF-148-D		
L12	Sound Trap	0Ω		TTR-158		
L13	IF Plate Chk.	2Ω		TLF-146-D		
L14	3rd VideoIF	.1Ω		TLF-149-D		
L15	Peaking Coil	3Ω		TLF-503		36 Microhenries
L16	" "	7Ω		TLF-504		180 Microhenries, Wound on 39KΩ resistor
L17	" "	6Ω		TLF-502		120 Microhenries, Wound on 22KΩ resistor
L18	" "	3Ω		TLF-503		36 Microhenries
L19	" "	6Ω		TLF-502		120 Microhenries, Wound on 22KΩ resistor
L20	Sound Take-off Trap	1.5Ω		TLF-114-D		
L21	Ratio Det.	4Ω	.8Ω	TLF-142-D		
L22	Width Cont. Coil	.5Ω		TLF-505		
L23	Hor. Linearity Cont	34Ω		TLF-506		

MISCELLANEOUS

ITEM No.	PART NAME	TELE-TONE PART No.	NOTES
M1	Band Switch	TSW-102D	
M2	Fuse		AGC-1/4 Amp.
M3	Ion Trap Assy.	TLF-500	
	Anode Connector & Lead	TFA-2	Picture Tube
	Escutcheon	TMS-121-D	
	Safety Glass	TGL-101-D	
	Knob	TKN-100	Outside
	Knob	TKN-101	Inside (Small Shaft)
	"	TKN-106	Outside (Drilled Hole)
	"	TKN-103	Inside (Large Shaft)
	"	TKN-107	Inside (Large Shaft Engraved Dot)
B1, B3, B5	Trimmer Strip Assy.	TAS501-D	Hor. Freq., Hor. Locking and Hor. Drive Trimmers
	Cabinet	TCB201-D	
	Cabinet Back	TBK151-D	
	Interlock Cord	TLD101	



CABINET-REAR VIEW

HORIZONTAL AND VERTICAL SWEEP ADJUSTMENTS

HORIZONTAL OSCILLATOR ALIGNMENT CHECK:

Tune in test pattern and turn horizontal hold control to extreme counter-clockwise position. Picture should remain in synchronization. Turn channel switch to another channel and then back to the original channel. Normally, the picture should be out of synchronization. Turn the control clockwise and the picture should slowly begin to synchronize and finally lock-in. This should occur when the control is approximately 90° from the extreme counter-clockwise position. The picture should remain in synchronization for another 90° in the clockwise direction of the control. At the extreme clockwise position the picture should again drop out of synchronization and 3½ to 4½ bars should be seen sloping downward to the right. If the receiver fails to hold synchronization during this check with the hold control at the extreme counter-clockwise position or fails to hold synchronization for at least 60° in the clockwise direction from the point when it drops into "sync." it will be necessary to align the horizontal oscillator circuit as follows:

(A) HORIZONTAL OSCILLATOR ALIGNMENT:

Turn horizontal hold control to extreme clockwise position. Tune in test pattern and adjust trimmer B1 until picture is out of sync. and shows 3½ to 4½ bars sloping downward to the right. If the trimmer has insufficient range, set it to its mid-position (one turn from tight) and adjust slug B2 until bars appear.

(B) HORIZONTAL LOCKING ALIGNMENT:

Turn the horizontal hold control to full counter-clockwise position. Switch to another channel and back to the original again.

Slowly turn horizontal hold control clockwise and note the least number of diagonal bars present just before picture syncs. If more than 4½ bars are present just before picture syncs. adjust "horizontal lock" trimmer B3 slightly clockwise. If less than 3½ bars are present adjust B3 slightly counter-clockwise and switch channel selector to another channel and back again. Recount bars present at the "lock-in" point. Repeat this procedure until 3½ to 4½ bars are present.

Repeat Steps (A) & (B) until conditions exist as outlined under "Horizontal Oscillator Alignment Check".

WIDTH, DRIVE & HORIZONTAL LINEARITY ADJUSTMENTS:

Turn width control B4 to maximum clockwise position. Adjust "horizontal drive" trimmer B5 for maximum brightness and linearity for right half of the picture. Readjust width control until picture fills the mask. Turn horizontal centering to align raster with the mask.

HEIGHT & VERTICAL LINEARITY ADJUSTMENTS:

Adjust the height control until picture fills mask vertically. Adjust the vertical linearity control until the test pattern is symmetrical from top to bottom.

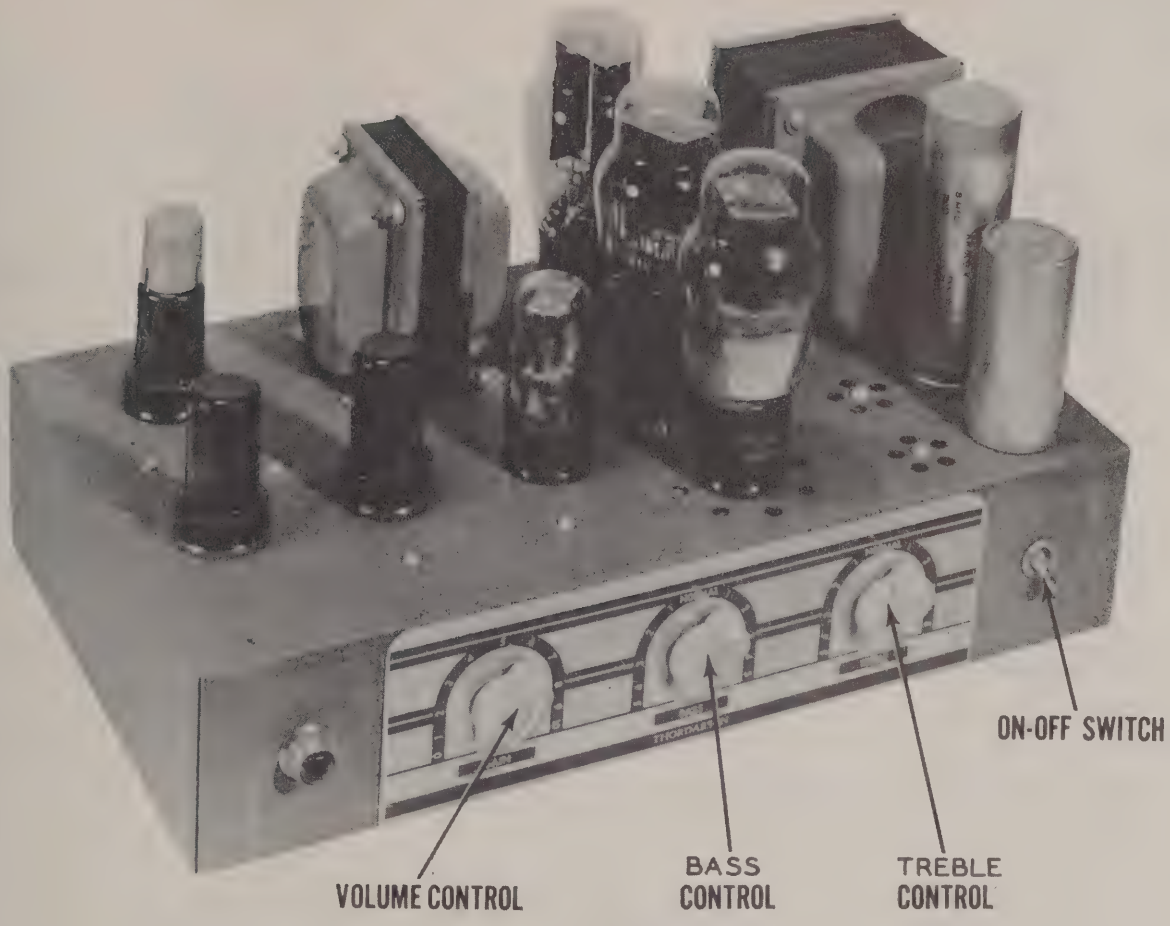
Due to interaction between these two controls it is necessary to repeat the adjustments. Adjust the vertical centering control to align the picture with the mask.

DISASSEMBLY INSTRUCTIONS

1. Remove eight push-on type control knobs.
2. Remove eight wood screws holding back cover.
3. Remove two screws holding antenna mounting strip. Remove mounting strip.
4. Remove five 7/16" hex head machine bolts holding chassis. Pull chassis out back of cabinet.

THORDARSON
MODEL T-31W10AX

THORDARSON
MODEL T-31W10AX



THORDARSON
MODEL T-31W10AX

TRADE NAME	Thordarson, Model T-31W10AX
MANUFACTURER	Thordarson Elect. Mfg., Div. of Maguire Ind., Inc., 500 W. Huron St., Chicago 10, Ill.
TYPE SET	AC Operated 2 Channel Audio Amplifier.
TUBES (SEVEN)	Types 6J7 Mic. Pre-Amp. 6SJ7 1st Audio Amp, 6J5 2nd Audio Amp, 6SN7 3rd AF-Phase Inv. (2) 6B4G Power Output, 5U4G Rectifier.
POWER SUPPLY	110-120 Volts AC
RATING	1.05 AMP. @ 117 Volts AC

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DATE 3/49 #495-22 SET #57 FOLDER #22

PARTS LIST AND DESCRIPTIONS

THORDARSON
MODEL T-31W10-AX

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		THORDARSON PART No.	STANDARD REPLACEMENT		
1	Mic. Pre-Amp	6J7	6J7	7R	
2	1st Audio Amp	6SJ7	6SJ7	8N	
3	2nd Audio Amp	6J5	6J5	6Q	
4	3rd AF-PhaseInv	6SN7	6SN7	8BD	
5	Power Output	6B4G	6B4G		
6	Power Output	6B4G	6B4G		
7	Rectifier	5U4G	5U4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	THORDARSON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	
8	8	600		GL600/8	KR608	D-8-600	AP-86	Filter
9A	8	475		GL475/8-8	KRC588	D-2X8-450	CL-88	Filter
B	8	475						Filter
10	10	450		PRS450/10	BR-1045	M-10-450	UT-12	Decoupling
11	10	450		PRS450/10	BR-1045	M-10-450	UT-12	Decoupling
12	40	150		PRS150/40	BR4015	M-40-150	UT-401	Bias Filter
13	10	25		PRS25/10	BR102A	M-10-25	TA-10	Cathode Bypass
14	.1	400		484- 1	GT4P1	ST-4-1	TC-1	Audio Coupling
15	.1	400		484- 1	GT4P1	ST-4-1	TC-1	Audio Coupling
16	.1	400		484- 1	GT4P1	ST-4-1	TC-1	Audio Coupling
17	.1	400		484- 1	GT4P1	ST-4-1	TC-1	Audio Coupling
18	.05	400		484-05	GT4S5	ST-4-05	TC-15	Audio Coupling
19	.5	400		484- 5	GT4P5	ST-4-5	TC-5	Tone Comp
20	.01	400		484-01	GT4S1	ST-4-01	TC-11	Tone Comp
21	.0005	600		1468-0005	GT6T5	ST-6-0005	TC-35	2nd AF Cathode Bypass
22	.1	400		484- 1	GT4P1	ST-4-1	TC-1	1st AF Screen Bypass
23	.1	400		484- 1	GT4P1	ST-4-1	TC-1	1st AF Feedback
24	.1	400		484- 1	GT4P1	ST-4-1	TC-1	Pre-Amp Screen Bypass

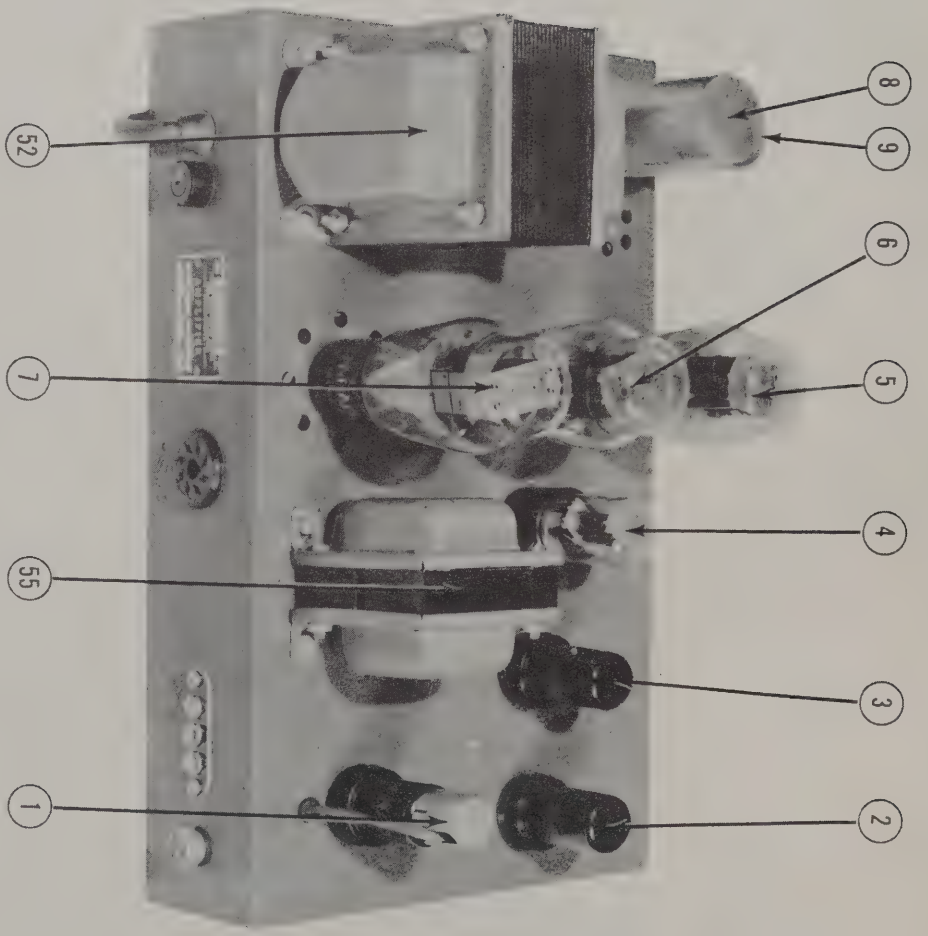
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	THORDARSON PART No.	IRC PART No.	CLAROSTAT PART No.	
25A	1 Meg	½	REP-1-105	D13-137	M-63-Z	Gain Control
B	Shaft		NOT REQ.	A	NOT REQ.	Attach to 25A Per Instruction
26	40K-Inf	1				Bass Control
27	40K-Inf	1				Treble Control

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES	
	RESISTANCE	WATTS	THORDARSON PART No.	IRC PART No.		
28	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn.	Pre-Amp Grid
29	4700Ω	½		BTS-4700	Yl.-Vi.-Red	Pre-Amp Cathode
30	2.2 Meg.	½		BTS-2.2Meg.	Red-Red-Grn.	Pre-Amp Screen
31	220KΩ	½		BTS-220K	Red-Red-Yl.	Pre-Amp Plate Load
32	1000Ω	½		BTS-1000	Br.-Blk.-Red	1st AF Cathode
33	220KΩ	½		BTS-220K	Red-Red-Yl.	1st AF Screen
34	22KΩ	½		BTS-22K	Red-Red-Or.	1st AF Plate Load
35	22KΩ	½		BTS-22K	Red-Red-Or.	Feed Back
36	220KΩ	½		BTS-220K	Red-Red-Yl.	2nd AF Grid
37	2200Ω	½		BTS-2200	Red-Red-Red	2nd AF Cathode
38	22KΩ	½		BTS-22K	Red-Red-Or.	2nd AF Cathode
39	22KΩ	½		BTS-22K	Red-Red-Or.	2nd AF Plate Load
40	220KΩ	½		BTS-220K	Red-Red-Yl.	3rd AF Grid
41	2200Ω	½		BTS-2200	Red-Red-Red	3rd AF Cathode
42	100KΩ	½		BTS-100K	Br.-Blk.-Yl.	3rd AF Plate Load
43	220KΩ	½		BTS-220K	Red-Red-Yl.	Phase Inv. Grid
44	100KΩ	½		BTS-100K	Br.-Blk.-Yl.	Phase Inv. Plate Load
45	220KΩ	½		BTS-220K	Red-Red-Yl.	Output Grid
46	220KΩ	½		BTS-220K	Red-Red-Yl.	Output Grid

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES	
	RESISTANCE	WATTS	THORDARSON PART No.	IRC PART No.		
47	22KΩ	½		BTS-22K	Red-Red-Or.	Decoupling
48	22KΩ	1		BTA-22K	Red-Red-Or.	Decoupling
49	10KΩ	1		BTA-10K	Br.-Blk.-Or.	Decoupling
50	20KΩ	25		DHA-20K		Bleeder
51	850Ω	10		ABA-1000		Output Bias See Note

Note: On IRC Replacement set slider 850Ω from end.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	THORDARSON PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.
52	117VAC @ 1.05A	750VCT 115A DC	5.0 VAC @ 3.0 A Sec. 4 6.4 VAC @ 1.95A	6.6VAC @ 1.65A	T49810C	P-4004#	T22R32	P-3155#

Drill New Mounting Holes.

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE @ CURRENT 1000∿	THORDARSON PART NO.	STANCOR PART NO.	THORDARSON PART NO.	MERIT PART No.	
53	.115A	95Ω	5.5 HENRY	T49809A	C-2309#			# Drill New Mounting Holes.

TONE CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE @ CURRENT 1000∿	THORDARSON PART NO.	STANCOR PART NO.	THORDARSON PART NO.	MERIT PART No.	
54	0	200Ω	3.5 HENRY	T40387A		T20C74		

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		THORDARSON PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
55	6600Ω CT	500Ω 250Ω 125Ω 15Ω 8Ω 4Ω	430Ω CT	27Ω 17.8Ω 7.4Ω .9Ω .65Ω .5Ω	T 498122A	A-3800#	T22S70#	A-3131#	# Drill New Mounting Holes.

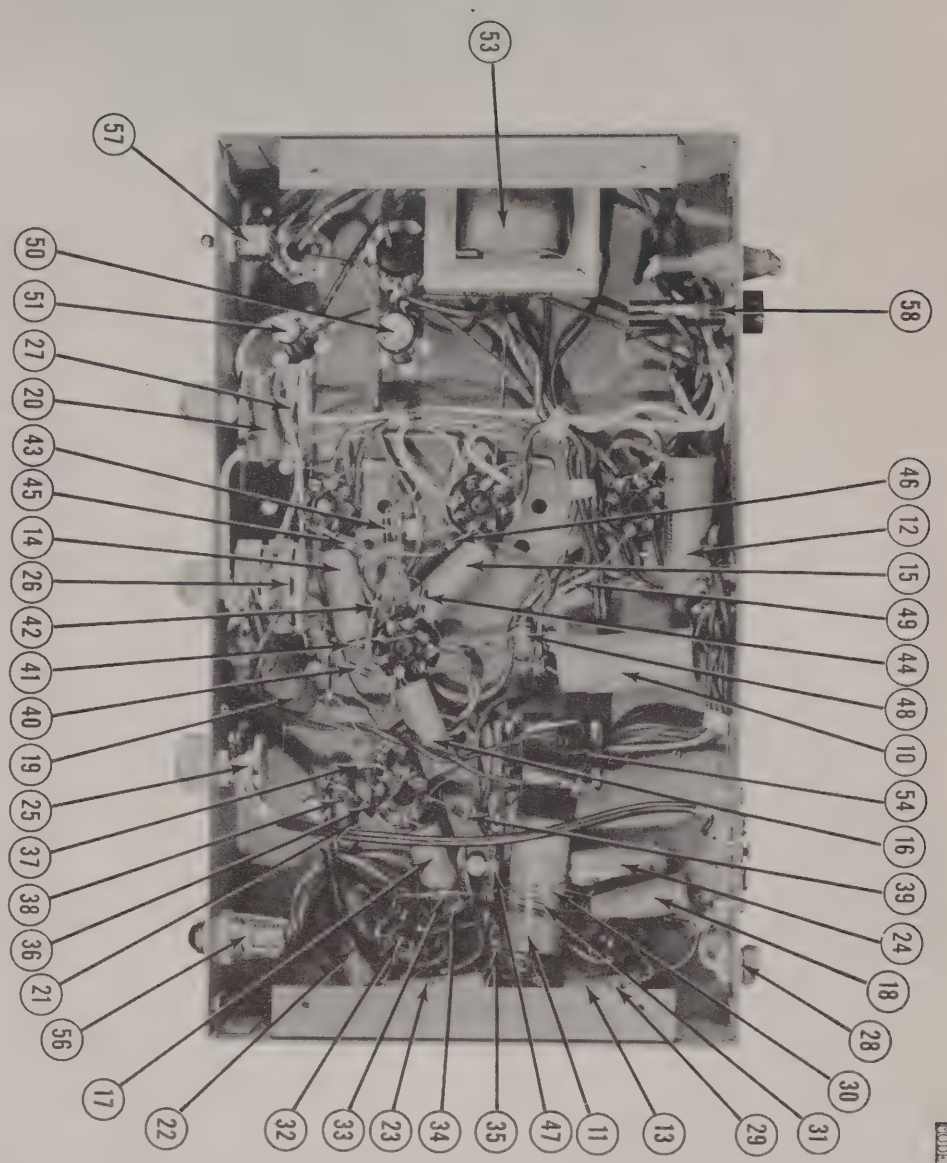
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					THORDARSON PART No.		
56	Screw	6-8 V	0.15 A	Brown			Type # 40

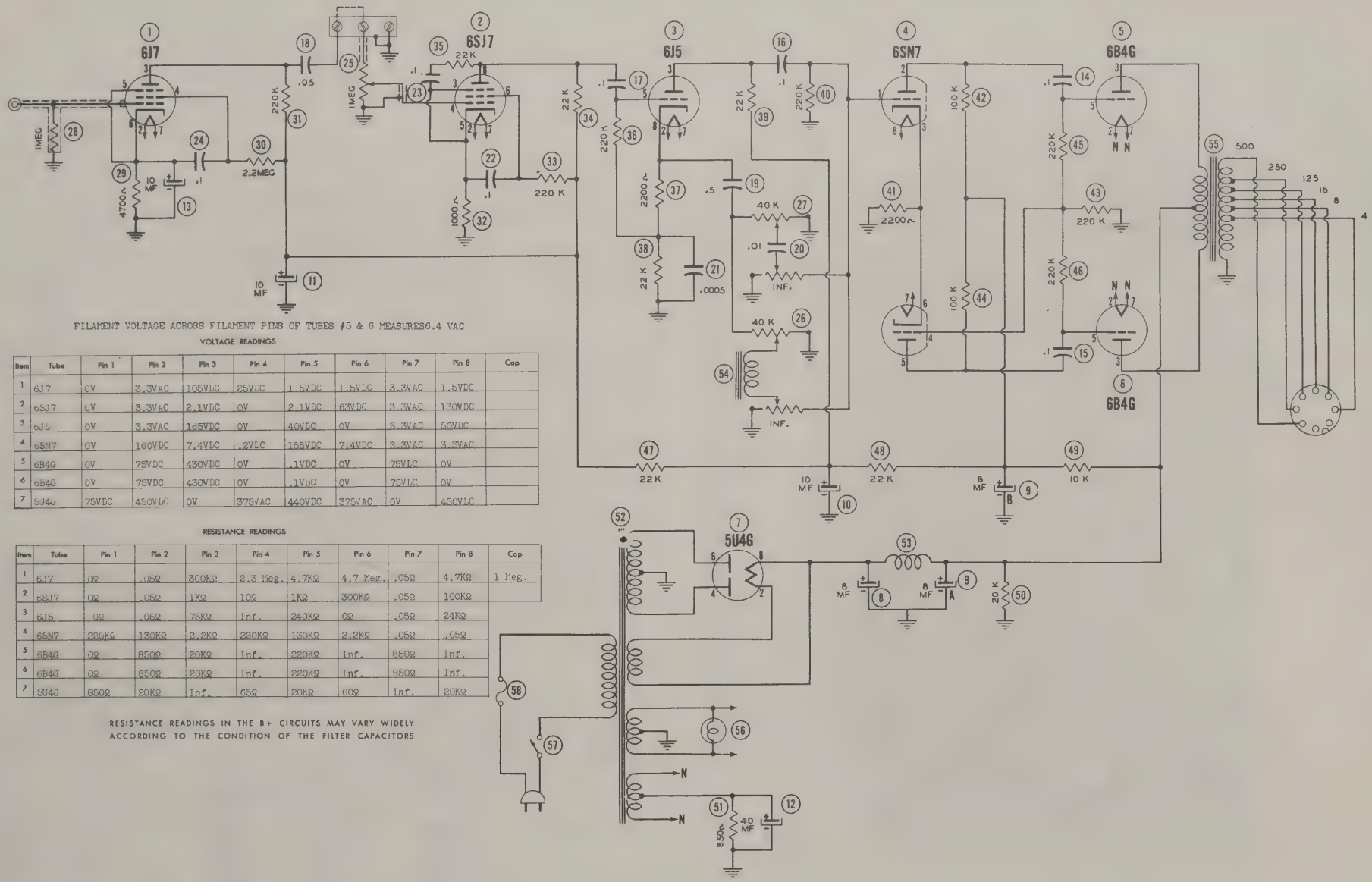
MISCELLANEOUS

ITEM No.	PART NAME	THORDARSON PART No.	NOTES
57	Switch		Power
58	Fuse		3AMP

CHASSIS—BOTTOM VIEW



THORDARSON MODEL T-31W10-AX



FILAMENT VOLTAGE ACROSS FILAMENT PINS OF TUBES #5 & 6 MEASURES6.4 VAC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	6J7	0V	3.3VAC	105VDC	25VDC	1.5VDC	1.5VDC	3.3VAC	1.5VDC	
2	6SJ7	0V	3.3VAC	2.1VDC	0V	2.1VDC	63VDC	3.3VAC	130VDC	
3	6J5	0V	3.3VAC	165VDC	0V	40VDC	0V	3.3VAC	50VDC	
4	6SN7	0V	160VDC	7.4VDC	.2VDC	155VDC	7.4VDC	3.3VAC	3.3VAC	
5	6B4G	0V	75VDC	430VDC	0V	.1VDC	0V	75VDC	0V	
6	6B4G	0V	75VDC	430VDC	0V	.1VDC	0V	75VDC	0V	
7	5U4G	75VDC	450VDC	0V	375VAC	440VDC	375VAC	0V	450VDC	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	6J7	0Ω	.05Ω	300KΩ	2.3 Meg.	4.7KΩ	4.7 Meg.	.05Ω	4.7KΩ	1 Meg.
2	6SJ7	0Ω	.05Ω	1KΩ	10Ω	1KΩ	300KΩ	.05Ω	100KΩ	
3	6J5	0Ω	.05Ω	75KΩ	Inf.	240KΩ	0Ω	.05Ω	24KΩ	
4	6SN7	220KΩ	130KΩ	2.2KΩ	220KΩ	130KΩ	2.2KΩ	.05Ω	.05Ω	
5	6B4G	0Ω	850Ω	20KΩ	Inf.	220KΩ	Inf.	950Ω	Inf.	
6	6B4G	0Ω	850Ω	20KΩ	Inf.	220KΩ	Inf.	950Ω	Inf.	
7	5U4G	650Ω	20KΩ	Inf.	65Ω	20KΩ	60Ω	Inf.	20KΩ	

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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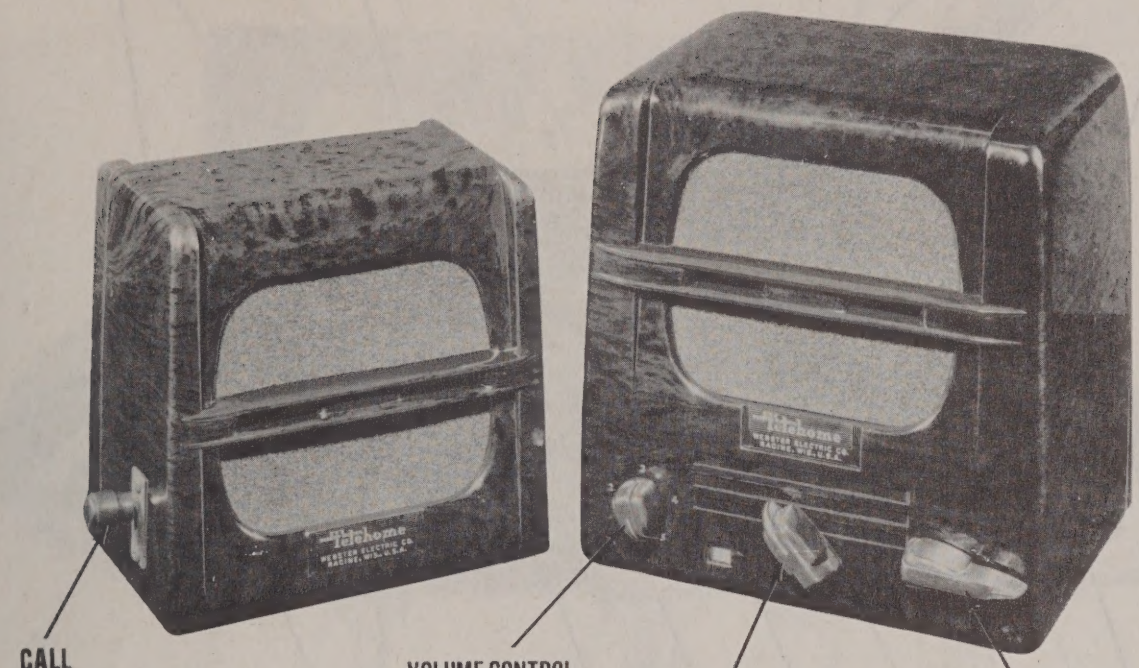
495-22

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

WEBSTER (TELEHOME)
MODEL 604M



WEBSTER (TELEHOME)
MODEL 604M

WEBSTER(TELEHOME) MODEL 604M

TRADE NAME	Webster(Telehome), Model 604M
MANUFACTURER	Webster Electric Co., Racine, Wisconsin.
TYPE SET	AC-DC Operated Inter Communication System with Room Speaker and Door Speaker
TUBES (THREE)	Types 12BA6 AF Amp., 50B5 Power Output, 35W4 Rectifier.
POWER SUPPLY RATING	110-125 Volts AC-DC .20 Amp. @ 117 Volts AC

INSTALLATION INSTRUCTIONS

Remove the back of the master unit by removing the four phillips-head screws. Connect one pair of wires to the left hand terminals (looking at rear of cabinet). This corresponds to position No.1 of the selector switch. Connect another pair of wires to the right hand terminals. This corresponds to position No.4 or Call-In of the selector switch.

Run wires along the most convenient route to the speaker location. Do not run the wires nearer than 12" along any other wires and space them at least 1" from other wires when crossing.

Remove back of the speaker cabinet in same manner as master unit. Connect the pair of wires from the left hand terminals of the master unit to the speaker terminals. Connect the pair of wires from the right hand terminals of the master unit to the call-in terminals on the speaker unit.

Additional room speakers may be connected in the same manner as above using terminals 2 and 3 on the master unit with all call-in wires connected in parallel at the right hand terminals on the master unit or some other convenient location.

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PARTS LIST AND DESCRIPTIONS

WEBSTER (TELEHOME) MODEL 604M

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		WEBSTER PART No.	STANDARD REPLACEMENT		
1	AF Amp.		12BA6	7BK	
2	Power Output		50B5	7BZ	
3	Rectifier		35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	WEBSTER PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.	
4A	50	150		AF 1010D4A	UP5515C	DY-306	EL-352	Filter ▲
B	30	150					" ▲	
C	10	25						Cathode Bypass
5	.1	400		484-.1	DT4P1	ST-4-1	TC-11	Line Isolation
6	.001	600		684-001	DT6D1	ST-6-001	TC-21	Audio Coupling
7	.005	600		684-005	DT6D5	ST-6-005	TC-25	AF Screen Bypass
8	.01	400		484-01	DT4S1	ST-4-01	TC-11	AF Grid Filter

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	WEBSTER PART No.	IRC PART No.	CLAROSTAT PART No.	
9	500KΩ	½				Volume Control

RESISTORS

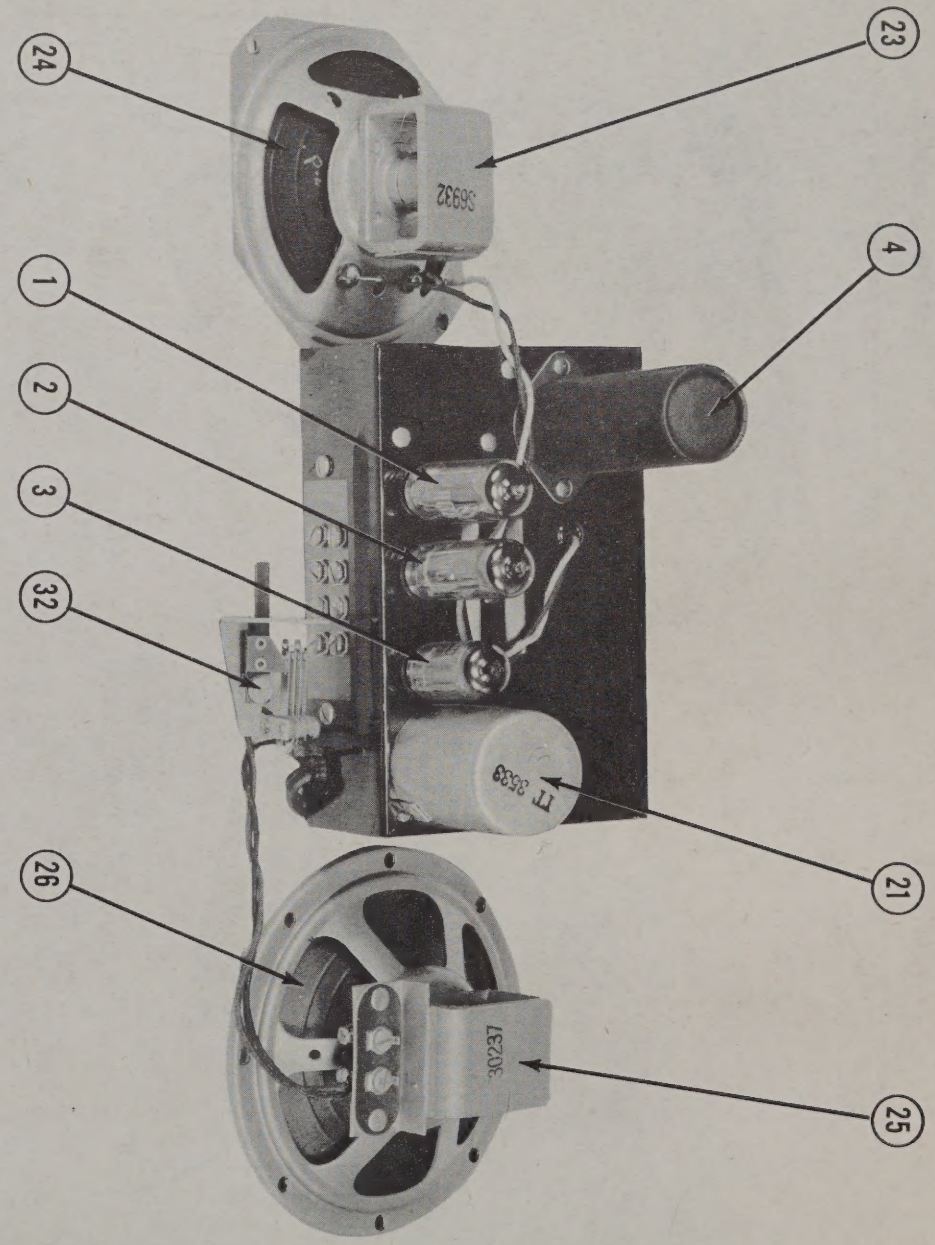
ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES		
	RESISTANCE	WATTS	WEBSTER PART No.	IRC PART No.			
10	150KΩ	½		BTS-150K	Br.-Grn.-Yl.	AF Grid.	
11	6200Ω	½		BTS-5600	Blue-Red-Red	AF Cathode	See Note
12	1.4 Meg.	½		BTS-1.5 Meg.	Br.-Yl.-Grn.	AF Screen	
13	510KΩ	½		BTS-470K	Grn.-Br.-Yl.	AF Plate Load	
14	51KΩ	½		BTS-47K	Grn.-Br.-Or.	Bias	See Note
15	160Ω	½		BW-½-150	Br.- Blue-Br.	Output Cathode	
16	5100Ω	½		BTS-4700	Grn.-Br.-Red	Filter	
17	200Ω	5		AB-200		Line Dropping	
18	240Ω	½		BW-½-220	Red-Yl.-Br.	Voltage Dropping	
19	51Ω	½			Grn.-Br.-Blk.	Rect. Ballast	
20	100Ω	½		BW-½-100	Br.-Blk.-Br.	Input XFMR. Shunt	

NOTE Item #14 used only when #11 is changed to 510Ω ½ W.

TRANSFORMER (INPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		WEBSTER PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
21	34Ω	48KΩ	1.4Ω	1280Ω	W-3533				

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		WEBSTER PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
22	2650Ω	50Ω	300Ω	4.3Ω	W-3534				

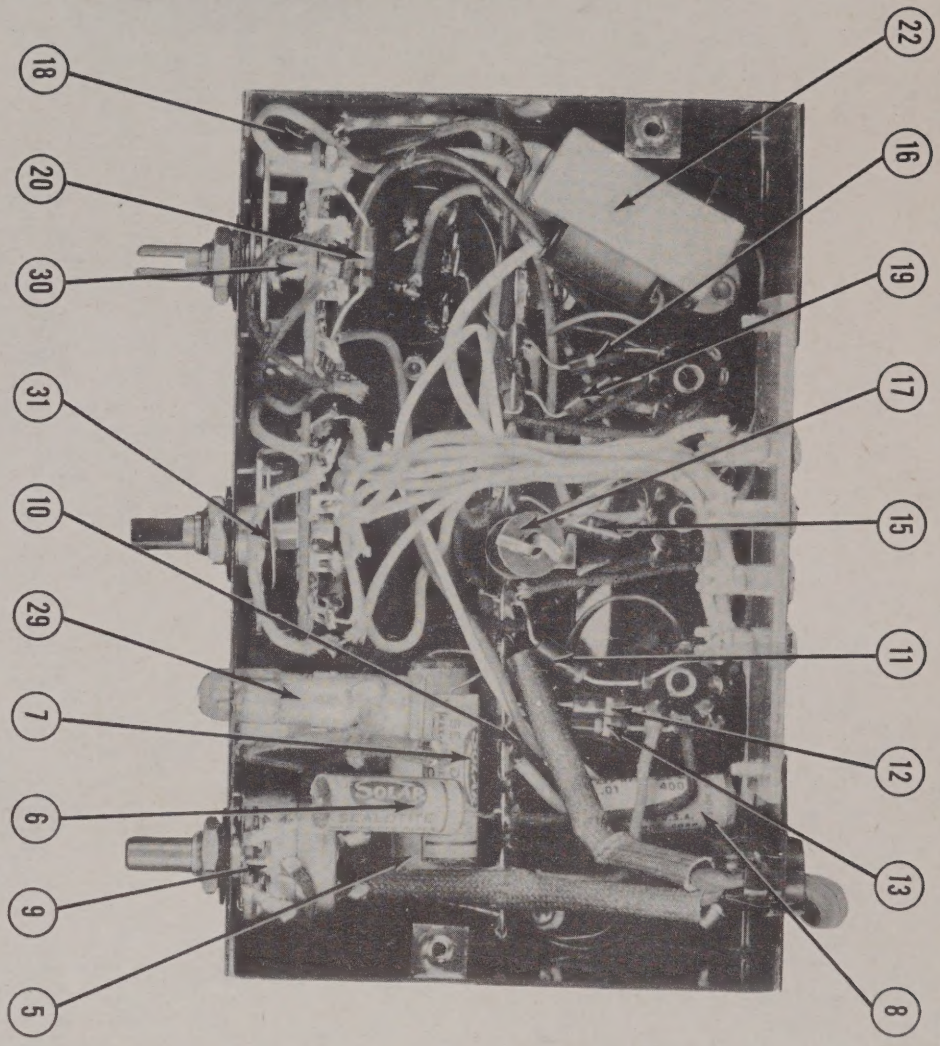
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			WEBSTER PART No.	JENSEN PART No.	QUAM PART No.	
23	FIELD PM	VC IMP. 50Ω	S6932	ST-739 ‡ Mod. P4-X		‡ Trim Flange
24	CONE DIA. 4"	VC DIA. 9/16"				
25	FIELD PM	VC IMP. 4Ω	30237	ST-740 Mod. P5-X		
26	CONE DIA 4-7/8"	VC DIA. 9/16"				
27	FIELD PM	VC IMP. 50Ω	30248			Obtainable as door unit under part #3D45 (optional)
28	CONE DIA 3-3/8"	VC DIA 9/16"				

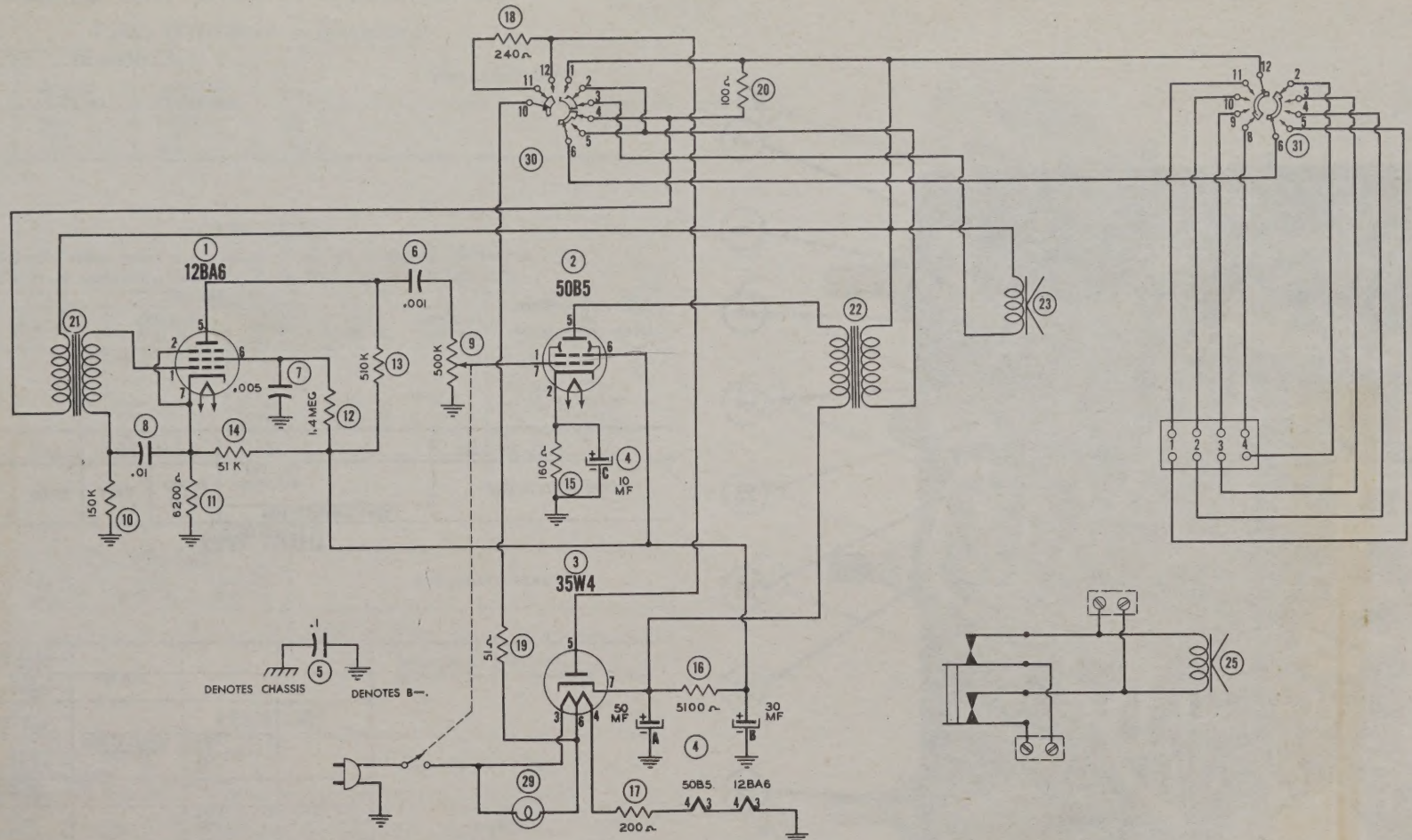
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					WEBSTER PART No.		
29	Bayonet	6-8V	0.15A	Brown			Type 47

CHASSIS—BOTTOM VIEW



WEBSTER (TELEHOME) MODEL 604M



VOLTAGE READINGS — V & R TAKEN WITH TALK-LISTEN SWITCH IN LISTEN POSITION

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BA6	0V	1VDC	0V	11VAC	20VDC	6VDC	1VDC
2	50B5	0V	4.8VDC	11VAC	57VAC	90VDC	75VDC	0V
3	35W4	0V	0V	87VAC	117VAC	103VAC	114VAC	97VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BA6	150KΩ	6.2KΩ	0Ω	11Ω	560KΩ	1.4Meg.	6.2KΩ
2	50B5	500KΩ	160Ω	11Ω	60Ω	50KΩ	55KΩ	500KΩ
3	35W4	Inf.	Inf.	260Ω	300Ω	525Ω	290Ω	50KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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495-23

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.